Progressive Scan CCD network camera

Installation instructions

Version 1.2

TV7220 - TV7223

Preface

Dear Customer,

Thank you for purchasing this network camera of the Eyseo series from ABUS Security-Center. You made the right decision in choosing this state-of-the-art technology,

which complies with the current standards of domestic and European regulations. The CE has been proven and all related certifications are available from the manufacturer upon request.

To maintain this status and to guarantee safe operation, it is your obligation to observe these operating instructions! In the event of questions, please contact your local specialist dealer.

This network camera is used for object surveillance. The recorded video signals are transmitted to a computer digitally via the connected network. The computer software permits simultaneous recording of up to 16 connected video signals. Data storage is subject to local national data-protection guidelines. Via the Internet Explorer, you have worldwide access to installed cameras (password-protected).

Precautions

The network camera and connected components must be kept free of moisture (cellars and similar surroundings are to be strictly avoided). Use of this product for other than the described purpose may lead to damage of the product. Other hazards such as short-circuiting, fire, electric shock, etc., are also possible. The equipment is designed for operation using a Class 2 12V DC transformer. No part of the product may be changed or modified in any way. Connection to the public power network is subject to country-specific regulations. Please be aware of applicable regulations in advance.

To avoid fire and injury, please observe the following:

Securely fasten the device at a dry location in the building.
Ensure sufficient air circulation.
Do not expose the device to temperatures less than 0°C or more than 35°C.
The device is designed for indoor use only.
Humidity must not exceed 90% (non-condensed).
Ensure that the voltage is disconnected when performing work on the device.

Please observe the following regulations to ensure trouble-free operation of your device.

The network camera is supplied by a 12V DC transformer.
The transformer should be connected to the 230V AC building mains by means of a separate, electrically protected line.
Connection work to the building mains is subject to country-specific regulations

General:

Improper or careless installation work may lead to faults and poor image quality. Therefore please read the instructions very carefully and follow the installation instructions for lines and components precisely.

The manufacturer reserves the right to make technical modifications at any time.

Before using this product

The use of surveillance equipment may be forbidden by law in some countries. This network camera is not only high-quality web camera but can also be used as part of a flexible surveillance system. Before using this equipment, make sure that all your surveillance activities are completely legal.

Before installation, check the product for completeness (page 5: Scope of delivery). Read the installation instructions before installing the network camera. Read the “Hardware installation” chapter carefully and follow the instructions contained in it to avoid damage caused by faulty assembly or incorrect installation. This will ensure that the equipment goes into operation correctly for the intended purpose.

Appendixes A and B contain possible solutions to problems occurring during installation and configuration.
The installation instructions describe different usage scenarios of the network camera.

Sections marked with ⚠ contain special hints and advice for the user. Ignoring this advice can result in damage to the equipment or injury.

Contents

Scope of delivery

Network camera
TV7220/TV7221/TV7222/TV7223

Lens

Antenna (only TV7221/23)

Transformer

Camera stand

Software CD

Installation instructions (on CD)

Hardware installation

Make sure that all accessories and articles listed above are present in the scope of delivery. Depending on application, an Ethernet cable may be required. This Ethernet cable must meet the specifications of UTP Category 5 (CAT 5) and must not be longer than 100 meters.

⚠ To prevent the risk of electric shock, first connect the socket of the transformer to the network camera before inserting the transformer into the mains socket.

⚠ Consult your dealer for the correct installation of peripheral devices.

Installation in Ethernet

The Progressive Scan Network camera tries to connect first to the wired Ethernet. If no Ethernet is available, then it will try to detect the wireless network using the set value.

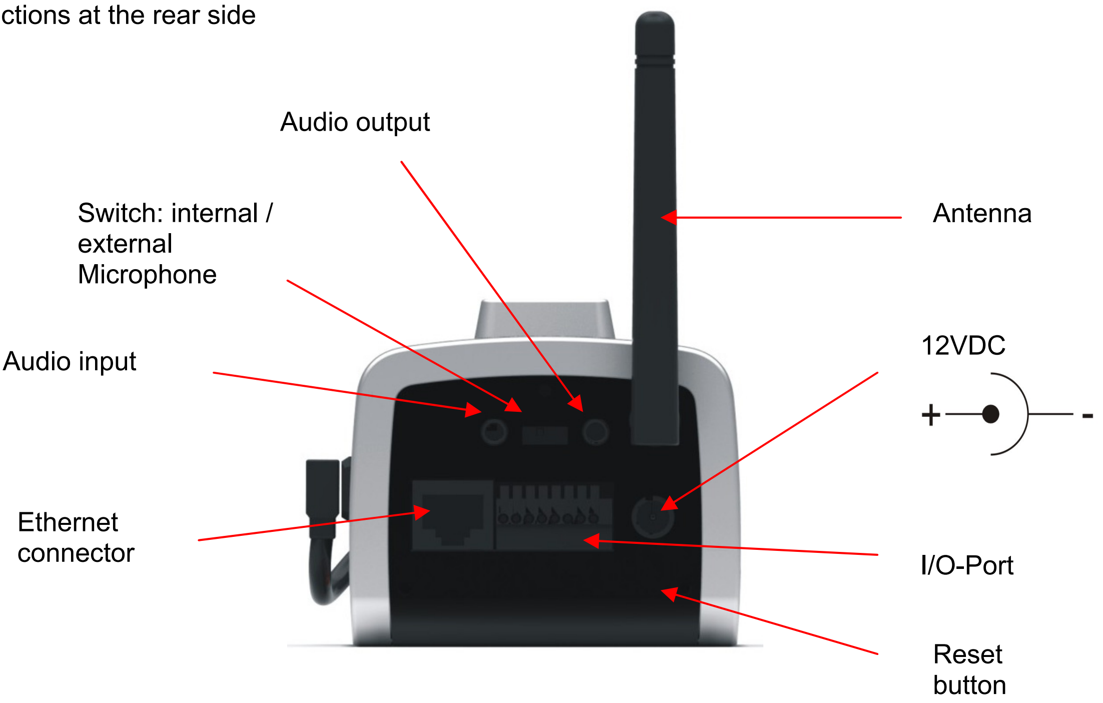
After power up the camera, the LED at the front will flash red once, then the start-up procedure will begin. During assignment of the IP address this LED will turn green continuously. After this procedure was performed successfully, the LED will flash 1/second in green mode.

Installation in the WLAN

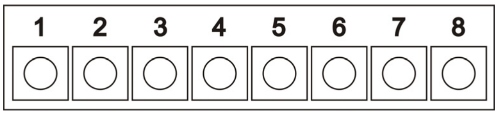
If the camera is supplied with electricity and no Ethernet is available, the camera switches to WLAN mode and searches for an access point with the name “default”. This name is known as the SSID (Service Set Identifier). If an access point with the SSID “default” is found, the LED on the front lights blue.
If connection with the basic settings (SSID: default) is not successful, connect the camera via a cable to the wired network and configure it.

External connections

Connections at the rear side

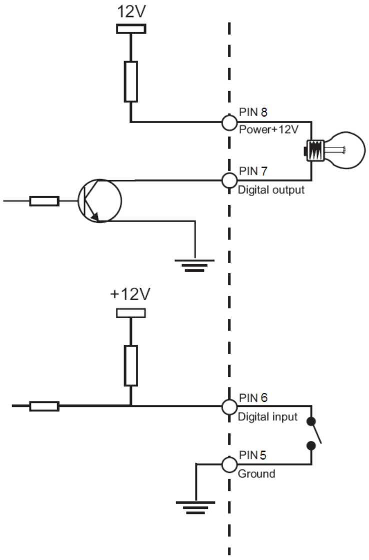


I/O-connector



1 : not used
2 : not used
3 : not used
4 : not used
5 : Ground
6 : Digital input
7 : Digital output
8 : Power 12VDC

Switching input and output



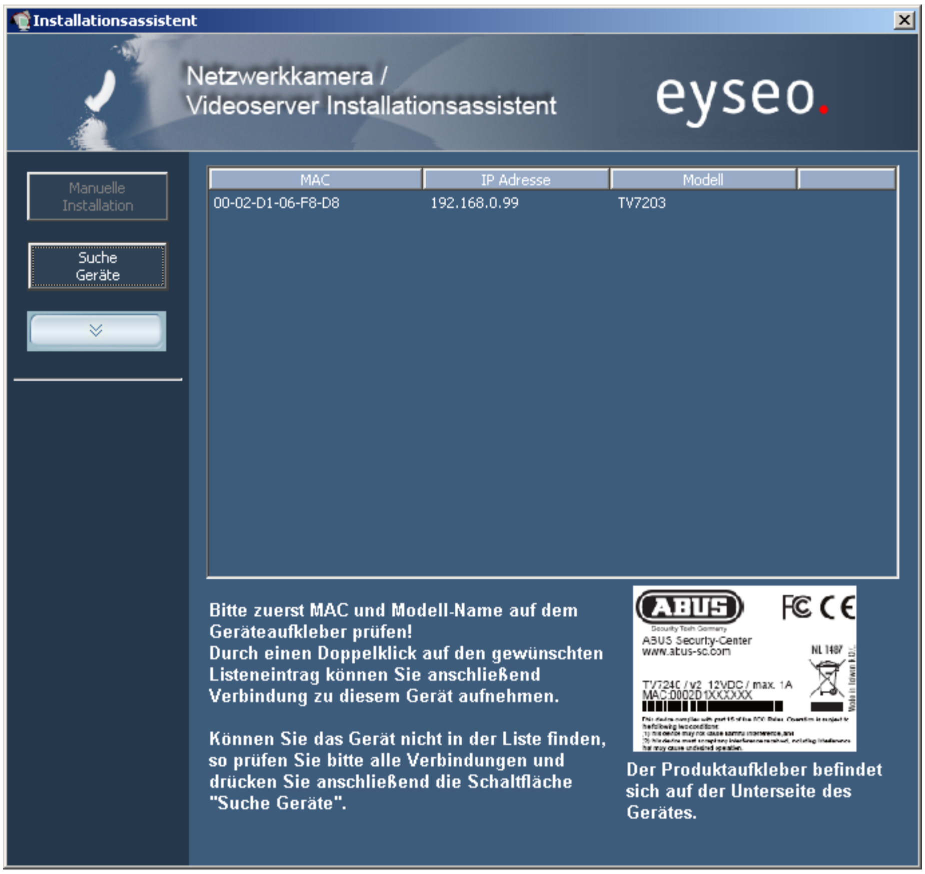
First access to network camera

The first access to the network camera should be done by using the Installation Wizard 2.
After the startup of this tool the wizard will search for any connected Eyseo network camera or videoserver.

The Standard IP address of the videoserver is **169.254.0.99**.
If there is a DHCP server running on the network then the IP address assignment will be done automatically, regarding your network stucture.

The network adapter parameters of thenetwork camera like IP address or subnet mask you can directly change under [Home / Configuration / Network], and so you can adapt the videoserver to your network (e.g. IP=192.168.0.99 / subnet mask = 255.255.255.0).

To connect to the network camera just double click the list entry on the result list.



MAC	IP Adresse	Modell
00-02-D1-06-F8-D8	192.168.0.99	TV7203

Bitte zuerst MAC und Modell-Name auf dem Geräteaufkleber prüfen!
Durch einen Doppelklick auf den gewünschten Listeneintrag können Sie anschließend Verbindung zu diesem Gerät aufnehmen.

Können Sie das Gerät nicht in der Liste finden, so prüfen Sie bitte alle Verbindungen und drücken Sie anschließend die Schaltfläche "Suche Geräte".

Der Produktaufkleber befindet sich auf der Unterseite des Gerätes.

⚠ After the start of the Installation wizard 2 the tool might add a virtual IP address to the current network settings of the PC. It depends whether DHCP in your network is activated or not.
After shut down of the Installation wizard 2 this virtual IP address will be removed.

Using this virtual IP address the first access and configuration process will be much easier. A manual configuration of the network adapter of the PC is therefore not necessary.

Access to the network camera via the Internet Explorer

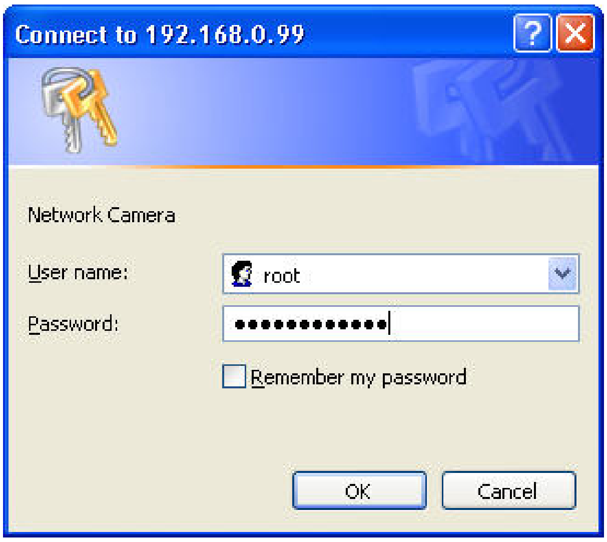
Defining a password to prevent unauthorised access

When delivered, no administrator password is defined for the network camera.
The network camera asks for this number at the start of operation. For security reasons, the administrator should define a new password immediately. After the new administrator password is stored, the network camera asks for the user name and password every time it is accessed. The administrator can define up to twenty (20) user accounts. Every user has access to the network camera, but not to the system configuration. Some system-critical functions are reserved for the administrator, such as system configuration, user administration and upgrading software programs. The administrator's user name is always **root** and cannot be changed. Following a password change, the browser displays an authentication window and asks for the new password. After changing the password, you cannot restore the original administrator password. Your only option is to reset all default factory settings/parameters.

To enter a password:

Open the Internet Explorer and enter the IP address of the camera (e.g.: <http://192.168.0.99>).

You are prompted for authentication:



Connect to 192.168.0.99

Network Camera

User name: root

Password: ••••••••••••

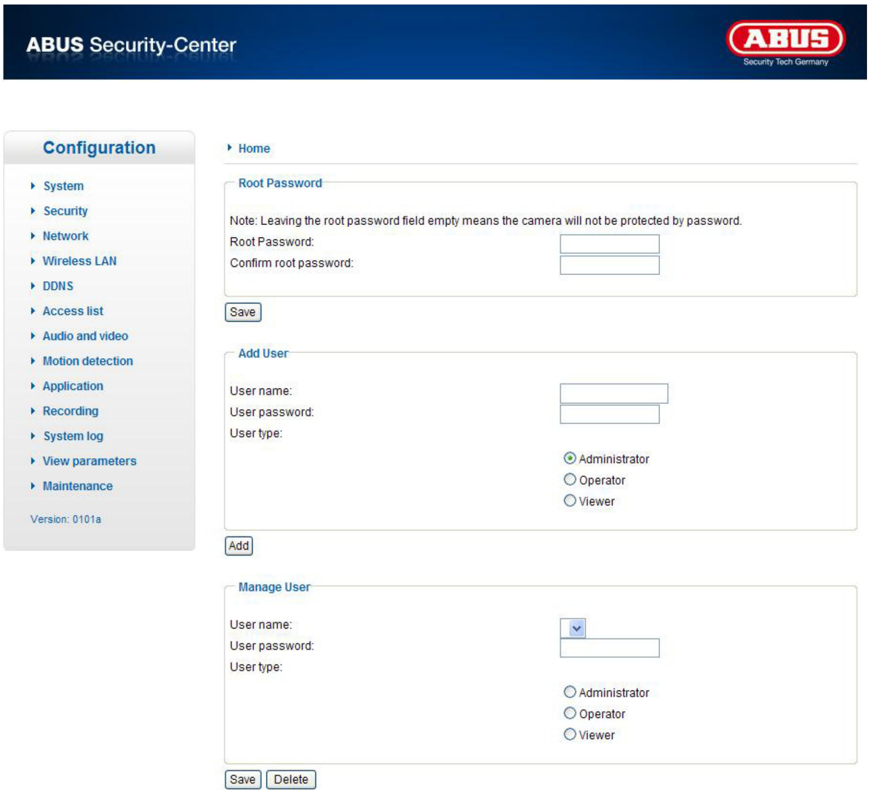
□ Remember my password

➔ You are now connected with the network camera and can see a video stream.

⚠ Note: It may happen that your PC's security settings prevent a video stream. You can change the security settings to a lower level under "Tools/Internet Options/Security". Make sure you enable Active X Control Elements and Downloads.

Changing the administrator password

Click “**Configuration**” and then “**Security**”.



Root Password

Note: Leaving the root password field empty means the camera will not be protected by password.

Root Password:

Confirm root password:

Save

Add User

User name:

User password:

User type:

● Administrator
○ Operator
○ Viewer

Add

Manage User

User name:

User password:

User type:

○ Administrator
○ Operator
○ Viewer

Save Delete

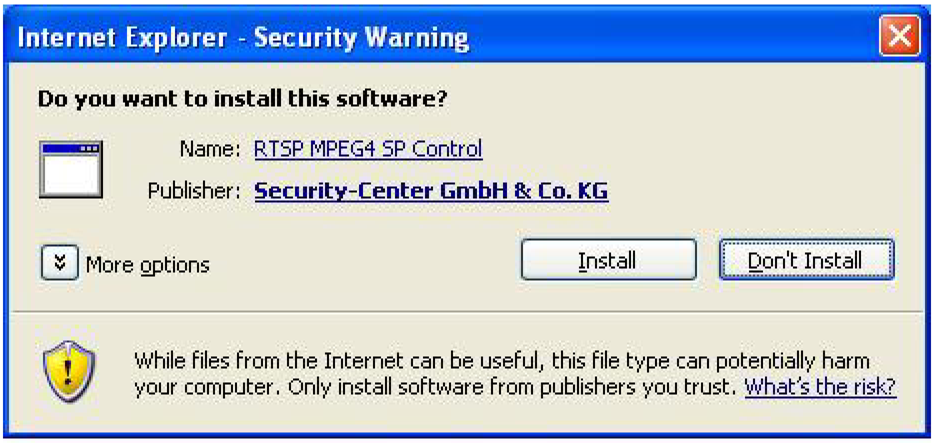
Under “**Root password**”, enter the administrator password and confirm it under **Confirm password**.

Click Save.
The new administrator password is saved.

Click “**HOME**” in the column on the left to exit configuration.

Installing the plug-in

When you first access the network camera under Windows, the web browser may ask for the installation of a new plug-in for the network camera. This query depends on the Internet security settings of your PC. If the highest security level is set, the PC will refuse any installation and any attempt at execution. This plug-in is used for video display in the browser. To continue, click Yes. If the web browser prevents continuation of the installation, open the Internet security settings and reduce the security level or consult the IT administrator or network administrator.



Internet Explorer - Security Warning

Do you want to install this software?

Name: RTSP MPEG4 SP Control

Publisher: Security-Center GmbH & Co. KG

While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

Basic user functions

Main window and camera view

The view of the main page consists of two parts:

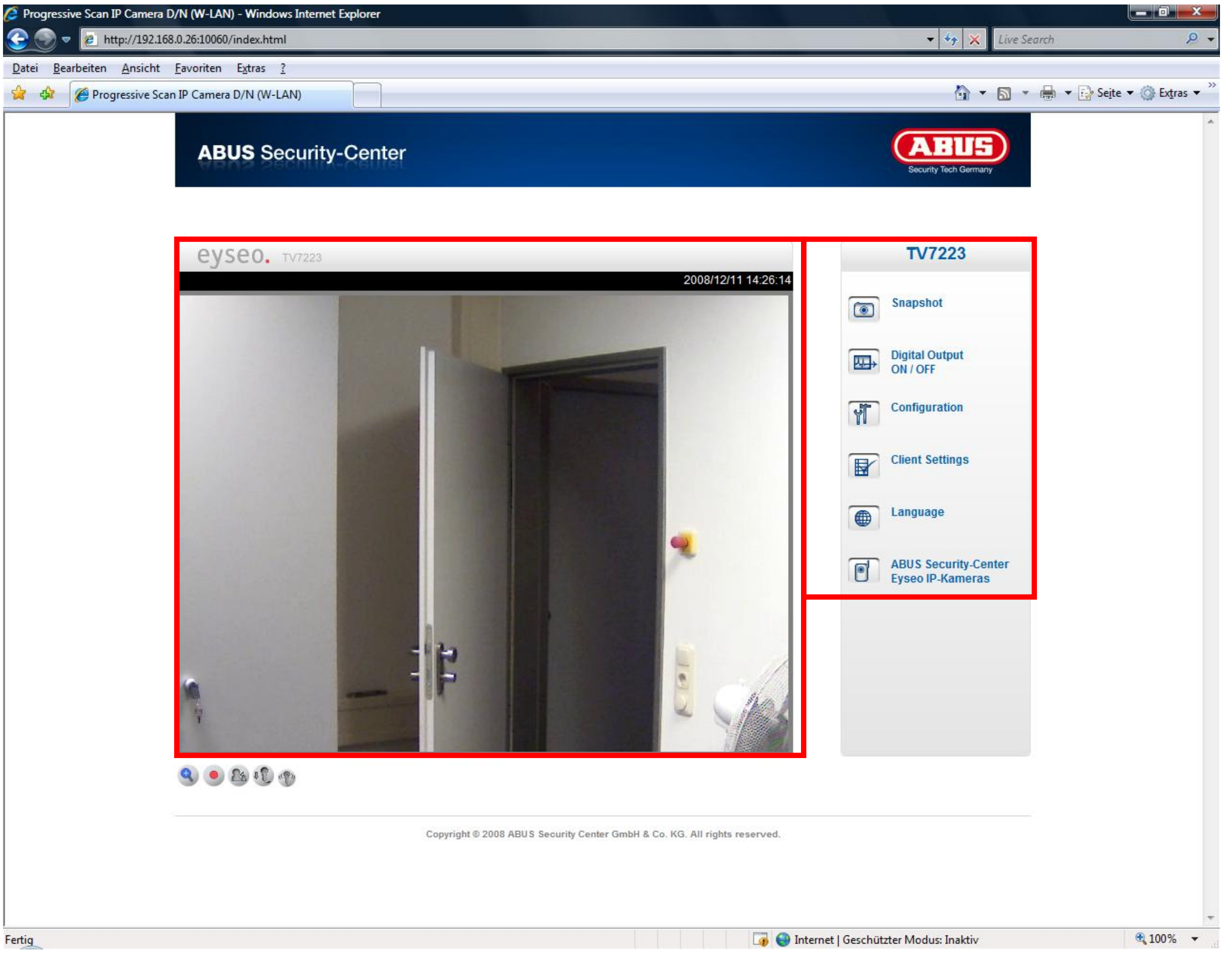
Configuration: You can configure the camera with these steps.
Camera view*:* Camera video stream

Click the configuration link on the left of the picture to open the configuration page.

Language: Selection for the GUI language of the camera.

Digital output: Here the external digital output can be switched manually.

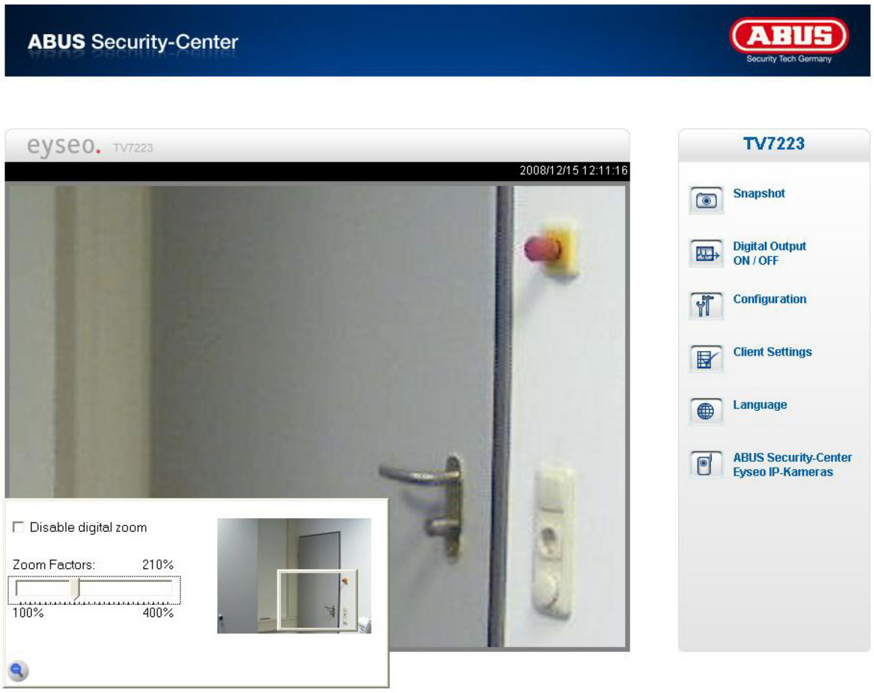
Local Recording ● : Recording to local PC harddrive can be started and stopped. The record path can be set under „Client settings/MP4 Record“.


Progressive Scan IP Camera D/N (W-LAN) - Windows Internet Explorer
http://192.168.0.26:10060/index.html
Live Search
Datei Bearbeiten Ansicht Favoriten Extras ?
Progressive Scan IP Camera D/N (W-LAN)
Seite Extras
ABUS Security-Center
ABUS
Security Tech Germany
eyseo. TV7223
2008/12/11 14:26:14
TV7223
Snapshot
Digital Output ON / OFF
Configuration
Client Settings
Language
ABUS Security-Center Eyseo IP-Kameras
Copyright © 2008 ABUS Security Center GmbH & Co. KG. All rights reserved.
Fertig
Internet | Geschützter Modus: Inaktiv
100%

Digital Zoom and Snapshot

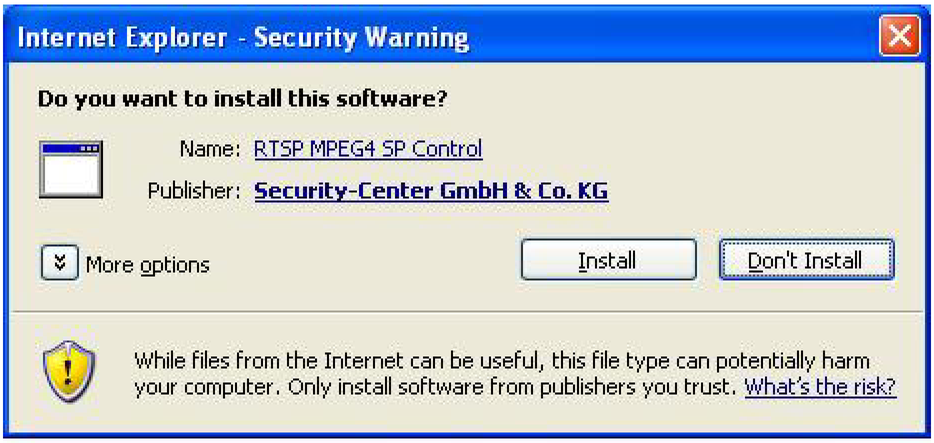
Click the magnifying glass under camera view. The control field for digital zooming appears. Disable the **Disable Digital Zoom** box and change the zoom factor with the slider.

Click “**Snapshot**”. The web browser displays a new window containing the snapshot. To save the snapshot, either left-click it and then click the diskette icon or right-click it and select **Save** from the context menu.



Client Settings

When you first access the **Connection Type** page under Windows, the web browser asks for the installation of a new plug-in. This plug-in was registered at certification and can be used to change parameters on the **Client settings** page. To install the plug-in, click Yes. If the web browser prevents continuation of the installation, open the Internet security settings and reduce the security level or consult the IT administrator or network administrator.



Internet Explorer - Security Warning

Do you want to install this software?

Name: RTSP MPEG4 SP Control

Publisher: Security-Center GmbH & Co. KG

While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

Two settings are available on the Client-Settings page. Under "**Media Options**", you can disable the audio- or video function. Under "**Protocol Options**", you can select a transmission protocol for data transfer between the client and the server. Two protocol options are available for optimising the application: UDP, TCP and HTTP.

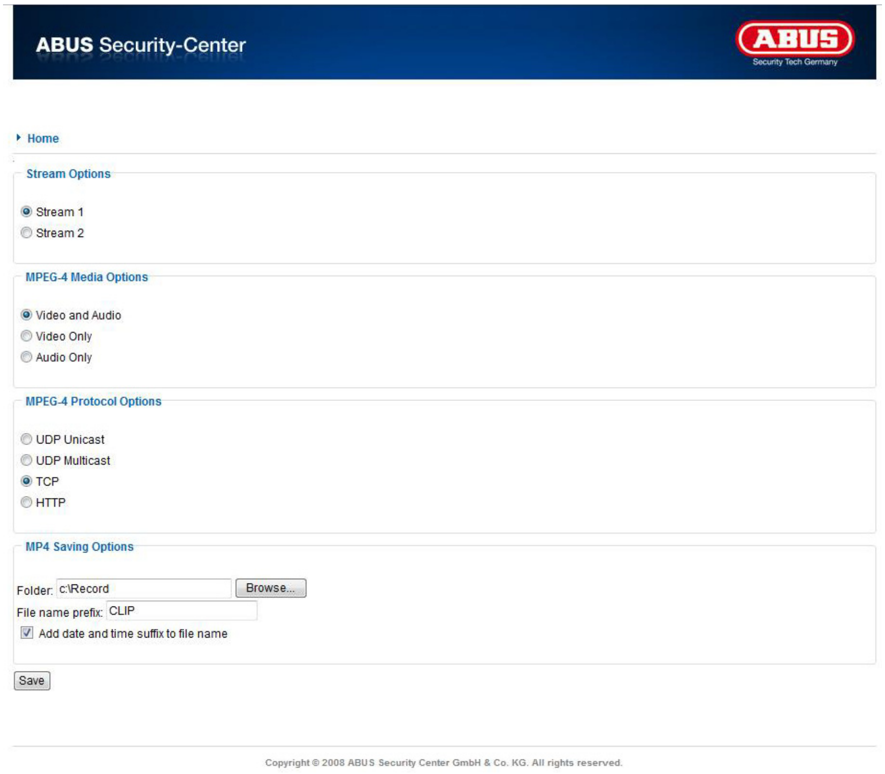
The UDP protocol gives you a larger number of realtime audio and video streams. However, some data packets can be lost due to the large data volume in the network. Pictures can be unclear. The UDP protocol is recommended if you have no special requirements.

With the TCP protocol, fewer data packets are lost and the video display is more accurate. The disadvantage of this protocol is that the realtime stream is worse than with the UDP protocol.

HTTP mode will use the HTTP Mode only (standard port 80), this is useful for firewall protected networks. In this mode there is no audio available.

The selection of the client is normally recommended in the following order: UDP – TCP – HTTP. When the network camera has been successfully connected, the "**Protocol Options**" box shows the selected protocol. The selected protocol is registered in your PC and used for the next connection. After changing the network environment or if you want to search again for the network camera using the web browser, select the UDP protocol manually, save it and then return to "**HOME**" to set up the connection again.

Internet Explorer:



ABUS Security-Center

Stream Options

● Stream 1
○ Stream 2

MPEG-4 Media Options

● Video and Audio
○ Video Only
○ Audio Only

MPEG-4 Protocol Options

○ UDP Unicast
○ UDP Multicast
● TCP
○ HTTP

MP4 Saving Options

Folder: c:\Record
File name prefix: CLIP
☑ Add date and time suffix to file name

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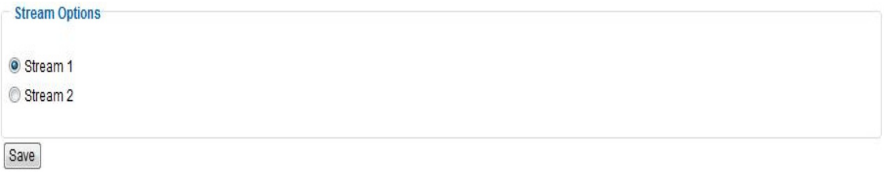
Mozilla Firefox:



Stream Options

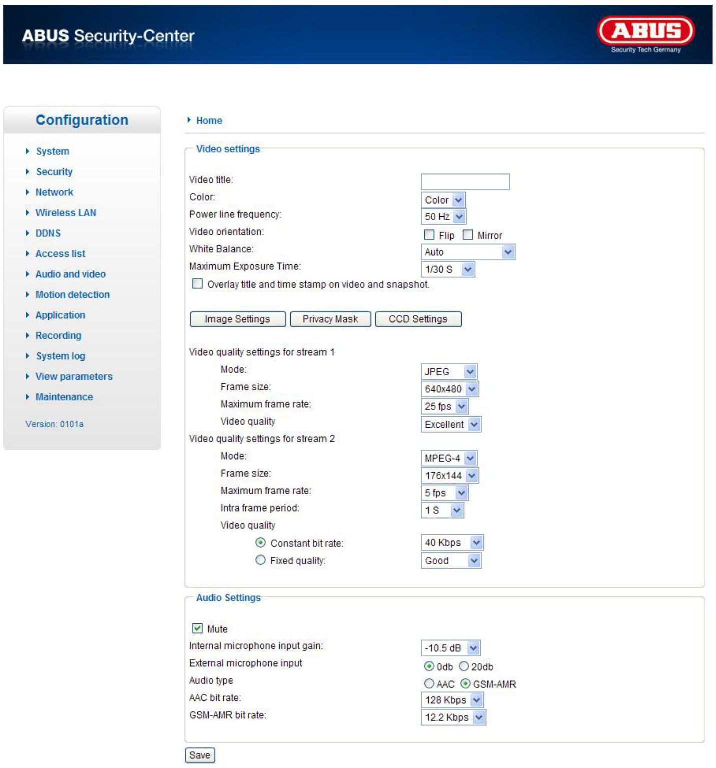
● Stream 1
○ Stream 2

<url> *http://<Network Camera>/clientset.html*
Network Camera is the original IP address or the hostname of the network camera.

Administrator settings

Configuration / video and audio

Best performance is produced by the maximum frame rate with best video quality and minimum network bandwidth. The three factors “Max frame rate”, “Constant bit rate” and “Fixed quality” on the video configuration page are interrelated.



Video settings

Video title:
Color: Color
Power line frequency: 50 Hz
Video orientation: □ Flip □ Mirror
White Balance: Auto
Maximum Exposure Time: 1/30 S
□ Overlay title and time stamp on video and snapshot.

Video quality settings for stream 1
Mode: JPEG
Frame size: 640x480
Maximum frame rate: 25 fps
Video quality Excellent

Video quality settings for stream 2
Mode: MPEG-4
Frame size: 176x144
Maximum frame rate: 5 fps
Intra frame period: 1 S
Video quality
● Constant bit rate: 40 Kbps
○ Fixed quality: Good

Audio Settings

☑ Mute
Internal microphone input gain: -10.5 dB
External microphone input ● 0db ○ 20db
Audio type ○ AAC ● GSM-AMR
AAC bit rate: 128 Kbps
GSM-AMR bit rate: 12.2 Kbps

Mobile access to the network camera

Many modern mobile telephones support access to MPEG4 videostream and GSM-AMR audio data. Due to restricted bandwidth, only a maximum resolution of 176x144 pixels is supported.

For high frame rates

To obtain a good visual realtime effect (more than 20 frames/s), the network bandwidth must be sufficiently large. If the network bandwidth is higher than 1 Mbps, the value for the “Constant bit rate” must be set to 1000Kbps or 1200Kbps and the “Fixed quality” to the highest quality. In the PAL system, the maximum frame rate is 25, and in the NTSC system, 30 frames per second. If your network bandwidth is more than 384Kbps, you can fix the bit rate according to your bandwidth and the maximum frame rate to 25 or 30 fps (frames per second). If the pictures in your environment are changed drastically, you can reduce the maximum frame rate to 20 frames per second to set the data transmission rate lower. This gives you a better video quality, and the human eye cannot distinguish between 20, 25 and 30 frames per second. If the network bandwidth is less than 384 Kbps, adjust the “Constant bit rate” according to the bandwidth and try to get the best performance by fine-tuning the “Max frame rate”. In a “slow” network, a high frame rate results in unclear, distorted images. Another way to improve quality is to select “176x144” in the “**Size**” option, or “320x240” for a larger view of the pictures. Video quality also depends on the number of users in the network. Performance can also be affected by a bad connection and by a restriction of the network burst.

For higher-quality pictures

For best video quality, set “Fixed quality” to “Detailled” or “Excellent” and the “Max frame rate” so that it corresponds to the bandwidth of your network. If your network is slow and you get “broken” images, go to the TCP protocol under **Connection Type** and select a more suitable transmission mode. Pictures can also be affected by a time delay due to a slower connection. The more users in the network, the greater this time delay.

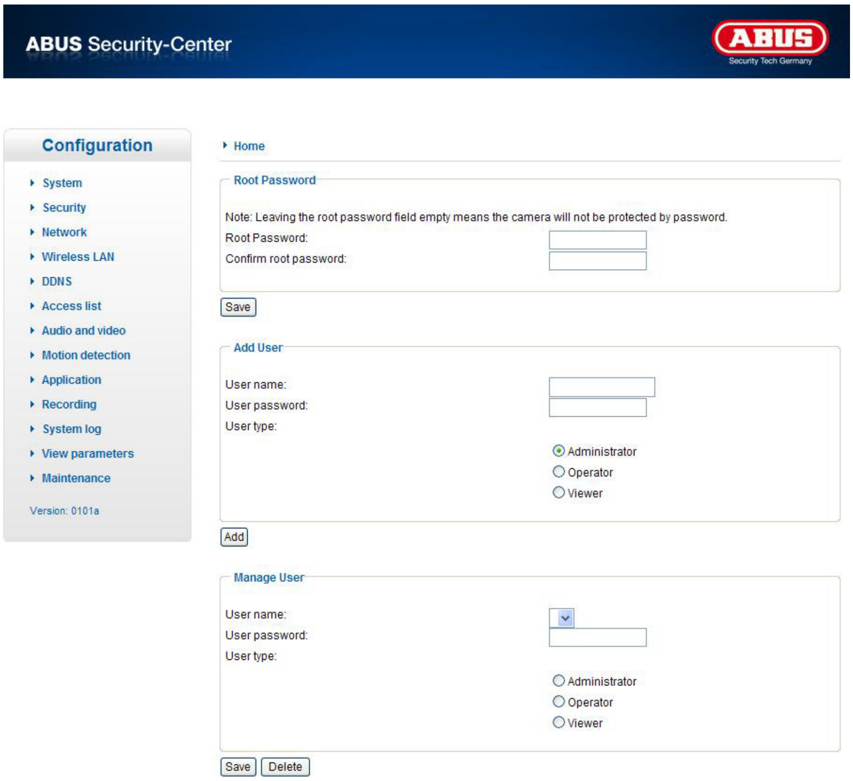
For high frame rates with high-quality pictures

If you have a broadband network, set “Constant bit rate” to or higher and leave “Constant bit rate” unchanged. You can also set the bandwidth according to the actual network speed or the frame rate. Start with 30 frames per second and reduce this setting until you get the best performance. However, do not reduce it to less than 15 frames per second. If the picture quality is not improved, select a lower setting for “Constant bit rate”.

Protecting the network camera with a password

Root password

The network camera is supplied with no password defined. Using this password, all users have access to the network camera, including its configuration, as long as they know the IP address. If other users are to have access to the network camera, you should therefore assign a password to the camera. To activate protection, enter a new password. The administrator is identified with this password.



Root Password

Note: Leaving the root password field empty means the camera will not be protected by password.

Root Password:

Confirm root password:

Add User

User name:

User password:

User type:

● Administrator
○ Operator
○ Viewer

Manage User

User name:

User password:

User type:

○ Administrator
○ Operator
○ Viewer

Opening accounts for new users

Under “**Configuration**”, select “**Security**”. Now go to the “**Add user**” section.

Add an account with user name and password for a second user. You can define up to twenty accounts for other users of the network camera. The camera checks only the access permission of the corresponding user name and password. This means that two or more users can use the same account at different levels.

Setting up a surveillance application

The administrator can use the built-in motion sensor for monitoring and signalling changes to the picture. Snapshots of events can be sent to an e-mail address or to an FTP server. For this purpose, settings have to be made under the configuration points “Network”, “Motion sensor” and “Application”. For detailed information, see “System configuration”.

Updating the software version

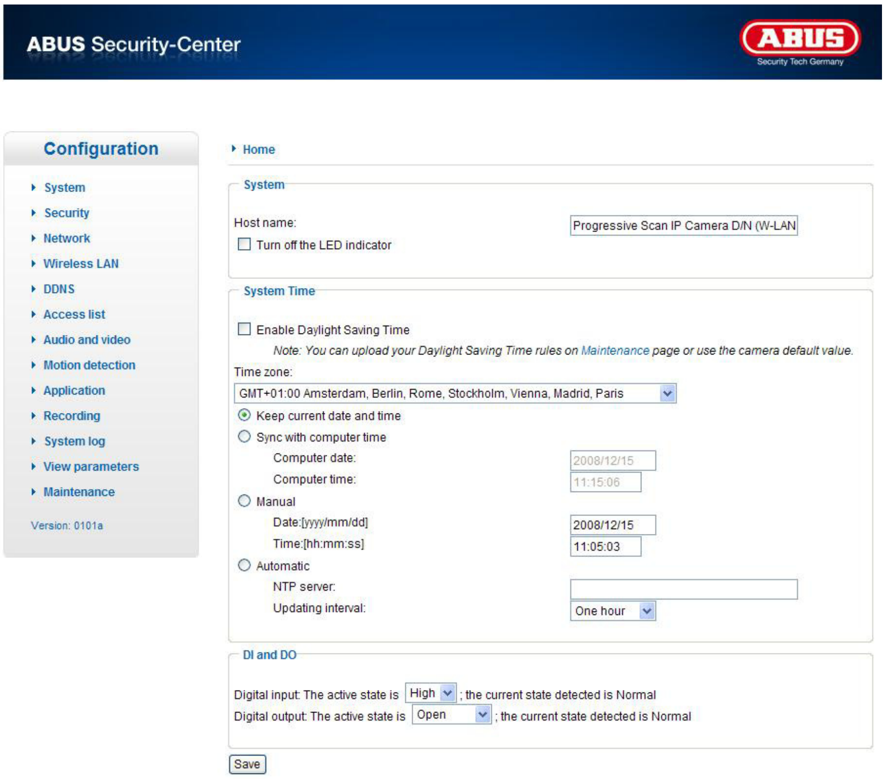
You can download the latest software from the website www.abus-sc.com. A user-friendly update wizard is provided for updating the network camera software (Installation Wizard / Upgrade). Only the administrator can start the update function. To update the system:
1. Download the firmware file with the name xxx.pkg from the corresponding products folder.
2. Start the update wizard and follow the instructions.
3. The complete procedure finishes in a few minutes, and the system is automatically rebooted.

You can also update the software via the menu item Configuration / management of the network camera.

⚠ If there is a power failure during the write process of the flash memory, the program in the memory of the CMOS-network camera may be irreparably damaged. If the security network camera cannot be correctly restarted following the update, consult your dealer’s technical support.

System configuration

Only the administrator has access to system configuration. The following sections explain each element in the left column. Specific tasks on the Options page are printed **bold**. The administrator can enter the URL under the picture to jump direct to the pictures page of the configuration.



System

Host name: Progressive Scan IP Camera D/N (W-LAN

□ Turn off the LED indicator

System Time

□ Enable Daylight Saving Time

Note: You can upload your Daylight Saving Time rules on Maintenance page or use the camera default value.

Time zone: GMT+01:00 Amsterdam, Berlin, Rome, Stockholm, Vienna, Madrid, Paris

● Keep current date and time

○ Sync with computer time

Computer date: 2008/12/15

Computer time: 11:15:06

○ Manual

Date:[yyyy/mm/dd] 2008/12/15

Time:[hh:mm:ss] 11:05:03

○ Automatic

NTP server:

Updating interval: One hour

DI and DO

Digital input: The active state is High ; the current state detected is Normal

Digital output: The active state is Open ; the current state detected is Normal

<URL>http://”Network Camera”/setup/config.html
<Network Camera> is the domain name or original IP address of the network camera.

<URL>http://”Network Camera”/setup/system.html
<Network Camera> is the domain name or original IP address of the network camera.

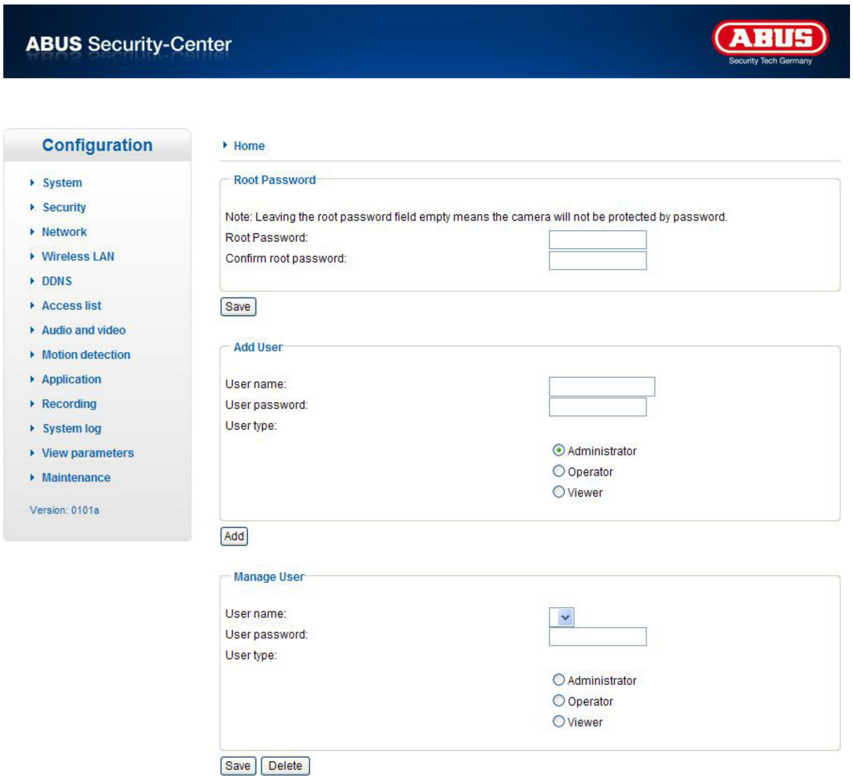
System

„**Host name**“ The text represents the title of the homepage.
„**Turn off the LED indicator**“ Select this option to switch off the LED on the front of the camera. This prevents other persons knowing that the camera is in use.
„**Keep current date and time**“ Click this option to keep the current date and time of the network camera. An internal realtime clock stores the date and time after the system is switched off.
„**Sync with computer time**“ Synchronises the date and time of the network camera with the local computer. The read-only date and time of the PC are displayed following updating.
„**Manual**“ Sets the date and time according to the administrator’s input. Note the date/time format when entering in the respective fields.
„**Automatic**“ Synchronises the date and time with the NTP server via the Internet every time the network camera is switched on. This is not possible if the respective time server cannot be reached.
„**NTP server**“ Assigns the IP address or the domain name of the time server. If you leave this text box empty, the network camera is connected to the default time servers.
„**Time zone**“ Sets the time according to the time server for local settings.
“**Update interval**” Select hourly, daily, weekly or monthly update with the time on the NTP server.

Don’t forget to click “**Save**” to make your settings take effect; otherwise, the time is not synchronised.

Security

„**Root password**“ For changing the administrator password by entering a new password. For security reasons, the passwords entered are represented by asterisks. After “**Save**” is clicked, the web browser prompts the administrator to enter the new password for accessing the network camera.
„**Add user**“ Enter the new user name and password and click “**Add**”. The new user is displayed on the list of user names. Up to twenty user accounts can be defined.
„**Delete user**“ Open the list of user names, select a user and click “**Delete**” to delete this user.



Root Password

Note: Leaving the root password field empty means the camera will not be protected by password.
Root Password:
Confirm root password:

Save

Add User

User name:
User password:
User type:
● Administrator
○ Operator
○ Viewer

Add

Manage User

User name:
User password:
User type:
○ Administrator
○ Operator
○ Viewer

Save Delete

<URL> http://<Netzwerkkamera>/setup/security.html
<Network > is the domain name or original IP address of the network camera.

Network

All changes made on this page cause a system reboot so that they can take effect. Make sure that the fields are correctly filled before you click “**Save**”.

Network connection

“LAN” The default is LAN. Use this setting if the camera is connected to a LAN. You also have to make other settings such as the IP address or the subnet mask.
“PPPoE” Use this setting if the camera is connected directly to a DSL modem. You will receive a user name and password from your ISP (Internet Service Provider).
“Get IP address automatically” At every restart of the network camera, an IP address is assigned.
“Use fixed IP address” The network data such as the IP address is defined here.

“IP address” This is needed for network identification.
“Subnet mask” Defines whether the destination is in the same subnet. The default value is “255.255.255.0”.
“Default router” Gateway for transmitting pictures to another subnet. An invalid router setting prevents transmission to these destinations in different subnets. For a Cross link connection from the camera to the PC you have to type in an IP address in the same subnet (e.g. 192.168.0.1)
“Primary DNS” Server of the primary domain name with which the hostnames are converted into IP addresses.
“Secondary DNS” Server of the secondary domain name for generating a reserve copy of the primary DNS.

“Enable UPnP presentation” This enables Universal Plug and Play. This is an extension of the PnP standard to network environments.
“Enable UPnP port forwarding” This enables Universal Plug and Play port forwarding for network services.

“**PPPoE**” If using the PPPoE interface, fill in the following settings from ISP: user name, password, password confirmation

HTTP:

“**HTTP port**” This port can be different from the standard port 80 (80; or 1025 to 65535). If this port is changed, users must be informed to ensure a successful connection. Example: If the administrator changes the HTTP port of the network camera with the IP address 192.168.0.99 from 80 to 8080, users have to enter “http://192.168.0.99:8080” in the web browser instead of “http://192.168.0.99”.

“**Secundary HTTP Port**” HTTP Port for stream 2
“**Access name for stream 1**” Access name for the MJPEG stream 1
“**Access name for stream 2**” Access name for the MJPEG stream 1

FTP:

„**FTP-Port**“ This is the internal FTP server port. This can be another than port 21 (21, or 1025 to 65535).

RTSP streaming:

“**RTSP-Authentication**” Enable the authentication of RTSP. On connection to an RTSP client username and password will be checked.

⚠ Note: This function must be supported by the media player (e.g. Realplayer 10.5)

“Access name for stream 1” The access name for establishing a connection from a client. The codec type must be MPEG 4! Use rtsp://<IP address>:RTSP-port/<access name 1> to establish a connection.

“Access name for stream 2” The access name for establishing a connection from a client. The codec type must be MPEG 4! Use rtsp://<IP address>:RTSP-port/<access name 2> to establish a connection.

“RTSP port” This port can differ from the default Port 554 (554, or 1025 to 65535). If you change it, note that the input format is analogue to the HTTP port.

“**RTP Port for video**” This can be other than the default port 5558. It must be an even number.

“**RTCP port for video**” This port must be RTP port for video plus 1.

“**RTP port for audio**” This can be other than the default port 5556. It must be an even number.

“**RTCP port for audio**” This port must be RTP port for audio plus 1.

Multicast: The settings can be configured for stream one and two.

“**Always multicast**” This option turns on the multicast, bandwidth-conserving technology.

“**Multicast group address**” It specifies an arbitrary group of IP hosts that have joined the group and want to receive traffic sent to this group.

“**Multicast video port**” This can be other than the default port 5560. It must be an even number.

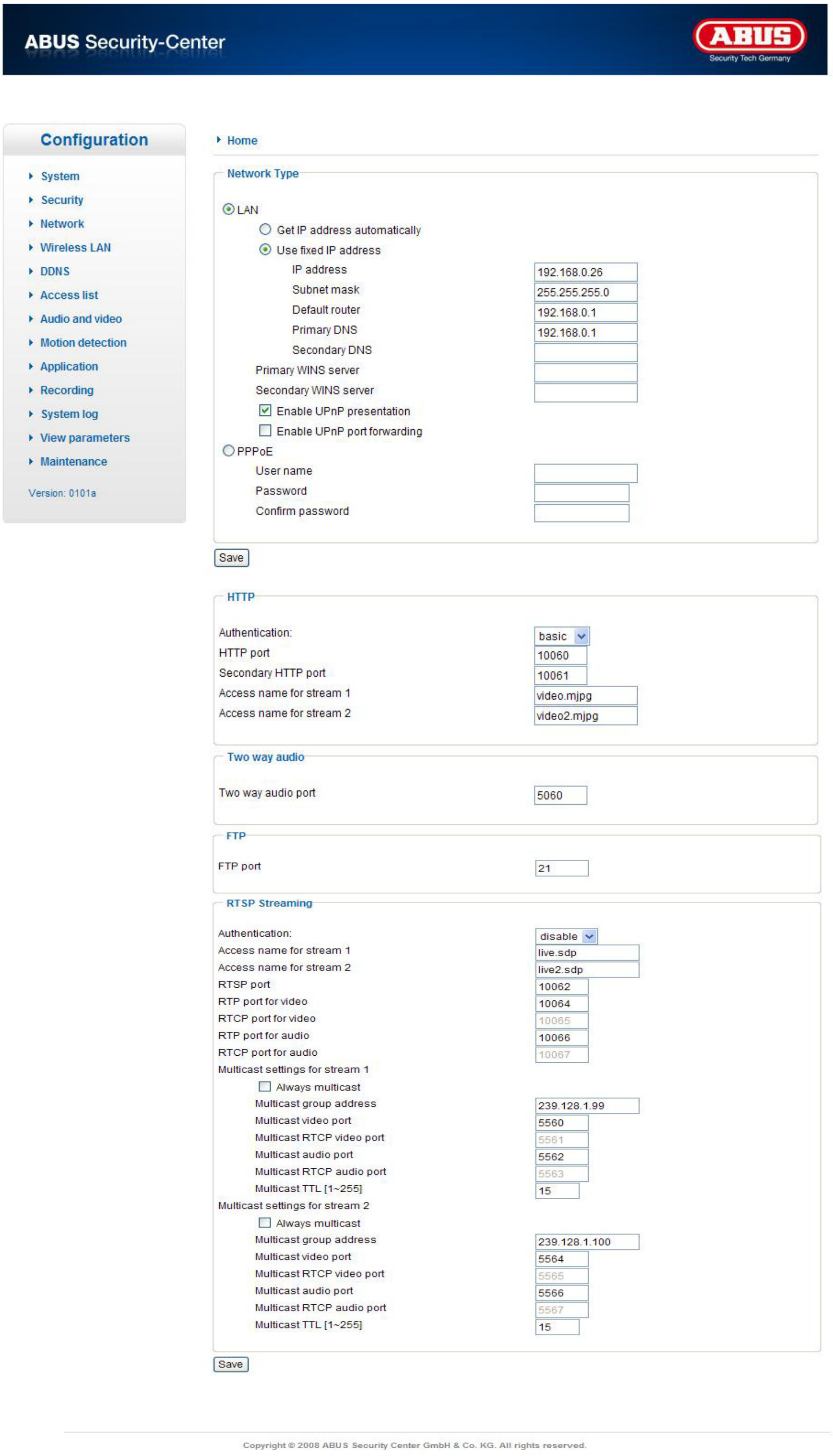
“**Multicast RTCP video port**” This port must be multicast video port plus 1.

“**Multicast audio port**” This can be other than the default port 5562. It must be an even number.

“**Multicast RTCP audio port**” This port must be multicast audio port plus 1.

“**Multicast TTL**” Time to Live

⚠ Pay attention to the port forwardings in your Router. All ports like http, rtsp must be forwarded.



Network Type

● LAN

○ Get IP address automatically

● Use fixed IP address

IP address: 192.168.0.26
Subnet mask: 255.255.255.0
Default router: 192.168.0.1
Primary DNS: 192.168.0.1
Secondary DNS:
Primary WINS server:
Secondary WINS server:

☑ Enable UPnP presentation

□ Enable UPnP port forwarding

○ PPPoE

User name:
Password:
Confirm password:

HTTP

Authentication: basic
HTTP port: 10060
Secondary HTTP port: 10061
Access name for stream 1: video.mjpg
Access name for stream 2: video2.mjpg

Two way audio

Two way audio port: 5060

FTP

FTP port: 21

RTSP Streaming

Authentication: disable
Access name for stream 1: live.sdp
Access name for stream 2: live2.sdp
RTSP port: 10062
RTP port for video: 10064
RTCP port for video: 10065
RTP port for audio: 10066
RTCP port for audio: 10067

Multicast settings for stream 1

□ Always multicast

Multicast group address: 239.128.1.99
Multicast video port: 5560
Multicast RTCP video port: 5561
Multicast audio port: 5562
Multicast RTCP audio port: 5563
Multicast TTL [1~255]: 15

Multicast settings for stream 2

□ Always multicast

Multicast group address: 239.128.1.100
Multicast video port: 5564
Multicast RTCP video port: 5565
Multicast audio port: 5566
Multicast RTCP audio port: 5567
Multicast TTL [1~255]: 15

<URL> http://<Network Camera>/setup/network.html
<Network Camera> is the domain name or original IP address of the network camera.

WLAN configuration

“SSID” (Service Set Identifier) The name that identifies the wireless network. The access point and the WLANnetwork camera must use the name SSID. The factory setting is “default”. IMPORTANT: The max. length is 32 characters; do not use: “ , ”, <, > and spaces.

“Wireless mode” Select one of the following:

> **“Infrastructure”** Thenetwork camera is connected to the network via an access point.
>
> **“Ad-Hoc”** In this mode, thenetwork camera can communicate direct with another network adapter (network card). A so-called Peer-to-Peer environment is set up.

“Channel” In infrastructure mode, the channel used is selected automatically by the camera. In Ad-Hoc mode, the channel must be set manually according to the other network adapter.

“TX rate” Set the maximum transmission speed in the network. In the factory, the speed is set to select automatically (“auto”), and the camera always tries to reach the highest transmission speed according to the environment.

“Preamble” A so-called preamble is set before each data packet. This preamble is used to synchronise the receiver and the sender. With a “short preamble”, the synchronisation length is shorter and therefore not so secure.

“Security” Select the encryption method:

> **“None”** No encryption selected.
> **“WEP”** (Wired Equivalent Privacy) A 64- or 128-bit key is used for encryption (HEX or ASCII). For communication with other equipment, these keys must be the same on both devices.
> **“WPA-PSK/WPA2-PSK”** (Wi-fi Protected Access – Pre Shared Keys) With this method, dynamic keys are used. As encryption protocols, TKIP (Temporal Key Integrity Protocol) or AES (Advanced Encryption Standard) can be selected. A so-called Pre-Shared Key must be defined.

“Auth mode” Authentication mode: Select one of the following methods:

> **“Shared”** This mode permits communication only with equipment using the same WEP key.
> **“Open”** The key is communicated over the whole network.

“Key length” Select 64 or 128 bit.
“Key format” Key format

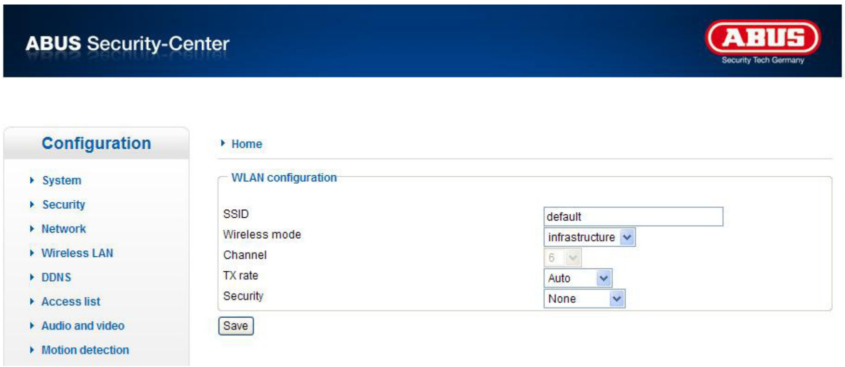
> **“HEX”** Hexadecimal format
> **“ASCII”** ASCII format

“Network key” For different key formats, different key lengths are expected.

> 64 Bit: 10 hex digits or 5 characters
> 128 Bit: 26 hex digits or 13 characters
> IMPORTANT: If you want to use characters 22 ("), 3C (<) or 3E (>), you cannot use ASCII format.

“Pre-Shared-Key” Enter this key in ASCII format with a length of 8 ~ 63 characters.

⚠ Incorrect settings may prevent access to the camera. If the system can no longer be addressed, read the notes on restoring the factory settings in the appendix.

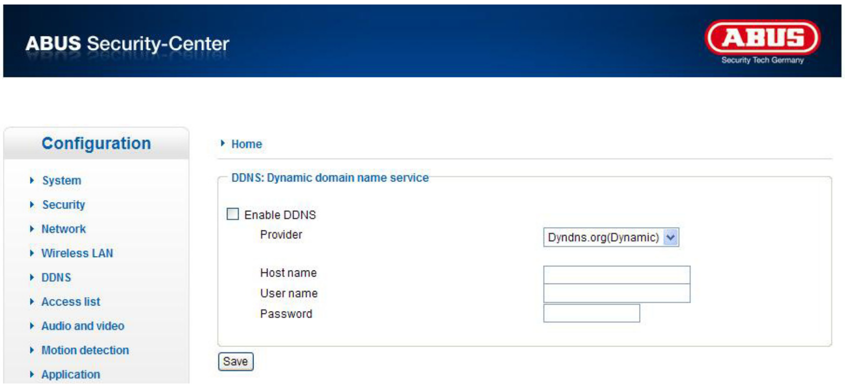


SSID: default
Wireless mode: infrastructure
Channel: 6
TX rate: Auto
Security: None

<URL> http://<Network Camera>/setup/wireless.html
<Network Camera> is the domain name or original IP address of the network camera.

Enable the DDNS function

„**Provider**“ The provider list contains four hosts that provide DDNS services. Connect to the service-provider’s website to make sure that the service is available.
„**Host name**“ This field must be completed if you want to use the DDNS service. Enter the hostname registered with the DDNS server.
„**Username/Email**“ The user name and the e-mail address must be entered in this field to set up a connection to the DDNS server or to inform users about the new IP address. Important: If you enter a user name in this field, you must enter a password in the next field.
„**Password/Key**“ To be able to use the DDNS service, enter the password or the key.



DDNS: Dynamic domain name service

□ Enable DDNS

Provider Dyndns.org(Dynamic)

Host name

User name

Password

<URL> http://<Netzwerkkamera>/setup/ddns.html
<Network Camera> is the domain name or original IP address of the network camera.

Access list

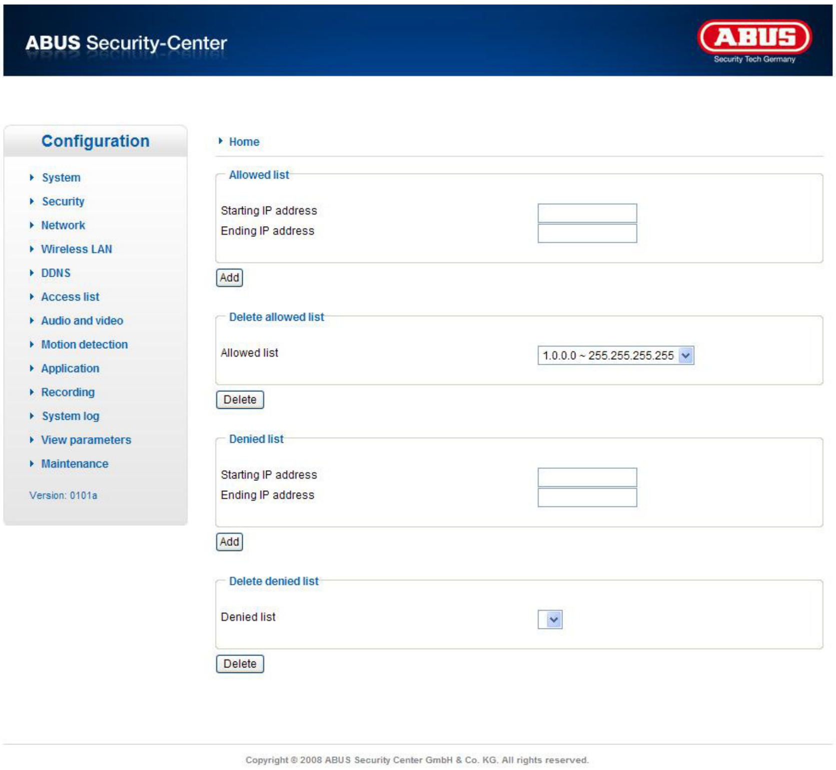
“Allow list” The IP list of accepted IPs is entered here and added to the access list. As a factory default, all IPs are accepted. If necessary, delete the entire list.

“Start IP address” Enter the first address of the desired range.
“End IP address” Enter the last address of the desired range.

“Delete allow list” Delete desired ranges from the access list.

“Deny list” Define the IP lists to be blocked.

“Delete deny list” Delete blocked IP lists.



Allowed list

Starting IP address
Ending IP address

Add

Delete allowed list

Allowed list 1.0.0.0 ~ 255.255.255.255

Delete

Denied list

Starting IP address
Ending IP address

Add

Delete denied list

Denied list

Delete

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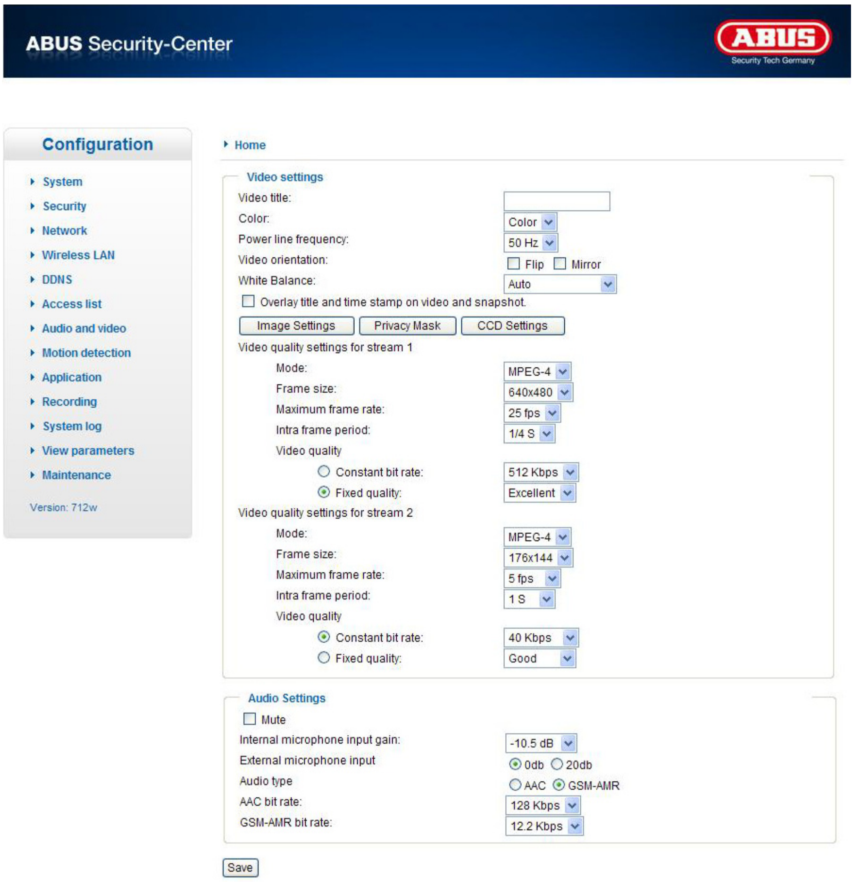
<URL> http://<Network Camera>/setup/accesslist.html
<Network Camera> is the domain name or original IP address of the network camera.

Video and audio

Video

“**Video title**” The text appears in the black bar above the video window with a timestamp. This timestamp (date and time) is supplied by the network camera, and the date and time are supplied by an integrated realtime clock.
“**Color**” Selects between colour and monochrome display.
“Power line frequency” Fluorescent light pulses with the mains frequency. Adapt the mains frequency to eliminate this pulsing in the picture.
„**Mode (Compression)**“ JPEG or MPEG-4 compression is possible
“**Frame size**” Four options are available for the three video sizes: “176x144”, “320x240” and “640x480”.
Three parameters are available for setting the video quality.
“**Max frame rate**” Restricts the maximum frame rate, which can be combined with the **“Key frame interval”** (only in MPEG-4 mode) to optimise bandwidth use and video quality. If the user wants to define bandwidth usage independently of the video quality, “**Constant bit rate**” and the desired bandwidth must be selected. Video quality can be affected due to sending the maximum frame rate within the restricted bandwidth if the pictures are fast-moving. To ensure video quality (quantising rate) independent of the network, a greater bandwidth is used to be able to handle maximum frame rate during the transmission of rapidly changing pictures.
“**Flip**” Rotates the video vertically.
“**Mirror**” Rotates the video horizontally. Select these options if the network camera is installed upside down or back to front.



Video settings

Video title:

Color: Color

Power line frequency: 50 Hz

Video orientation: □ Flip □ Mirror

White Balance: Auto

□ Overlay title and time stamp on video and snapshot.

Video quality settings for stream 1

Mode: MPEG-4

Frame size: 640x480

Maximum frame rate: 25 fps

Intra frame period: 1/4 S

Video quality

○ Constant bit rate: 512 Kbps

● Fixed quality: Excellent

Video quality settings for stream 2

Mode: MPEG-4

Frame size: 176x144

Maximum frame rate: 5 fps

Intra frame period: 1 S

Video quality

● Constant bit rate: 40 Kbps

○ Fixed quality: Good

Audio Settings

□ Mute

Internal microphone input gain: -10.5 dB

External microphone input ● 0db ○ 20db

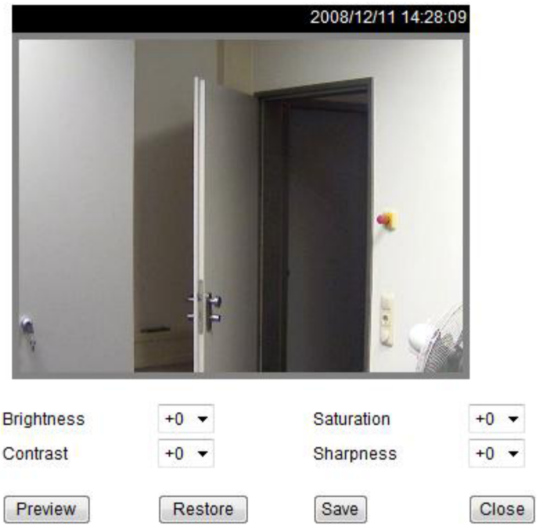
Audio type ○ AAC ● GSM-AMR

AAC bit rate: 128 Kbps

GSM-AMR bit rate: 12.2 Kbps

Picture settings

Click “**Image settings**” to open another window in which you can set the “Brightness”, “Contrast”, “Saturation” and the “Sharpness” of the video picture.
To check your settings, click “**Preview**”.
To save the picture parameters, click “**Save**”.
To discard your changes, click “**Restore**”.
“White balance” Set the value for an optimal colour hue.



Brightness	+0	Saturation	+0
Contrast	+0	Sharpness	+0

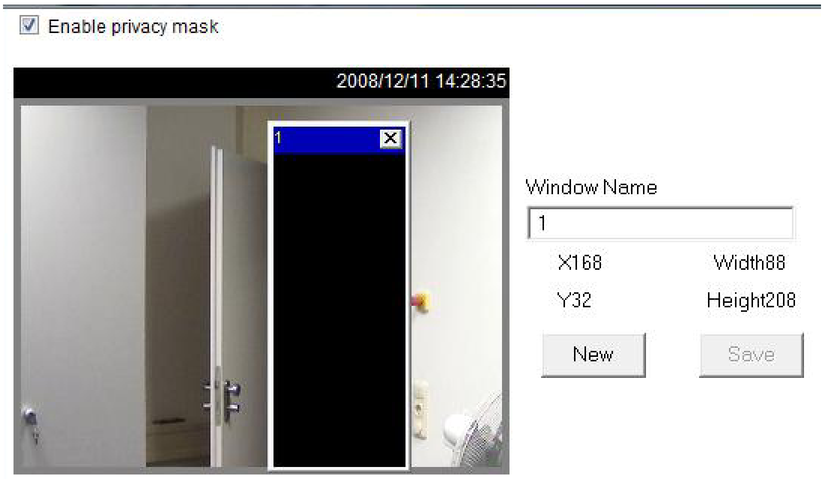
Privacy Mask

Using this function you can mask parts of the video picture. At most 5 windows can be setup simultaneously.

To activate the mask function you must check the function “Enable privacy mask”.

⚠ This function should not be activated when PTZ cameras are installed.

⚠ This function only can be setup using the MS Internet Explorer with ActiveX.



☑ Enable privacy mask

Window Name: 1

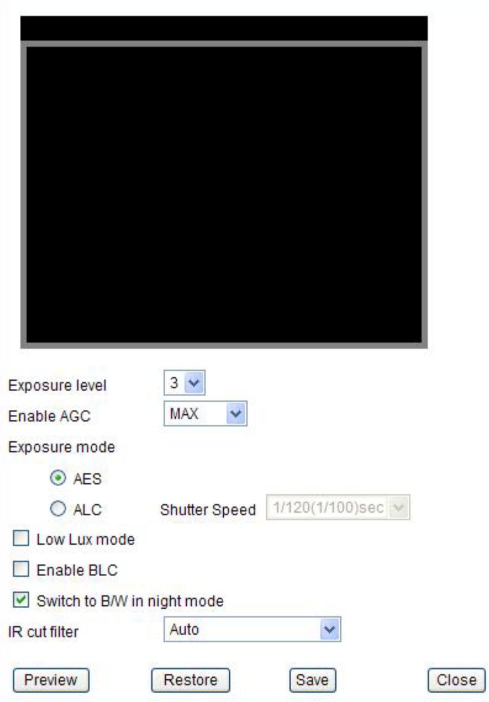
X168	Width88
Y32	Height208

<URL> http://<Videoserver>/setup/privacy.html
<Videoserver> ist die IP-Adresse oder der Hostname des Videoservers.

CCD settings

„IRIS level“ Controls the aperture of the auto iris lens manually
„AGC“ Automatic gain control: Normal or Maximum
“AES” Auto Electronic Shutter
“ALC” Automatic light control, fixed shutter speed
“Low Lux Mode” extends the shutter speed in low lux environment
„BLC“ Backlight compensation: It will help to identify objects in front of strong light sources.
„Swich to B/W in night mode“ option
„IR cut filter“ Options to control the removable IR cut filter:

- Auto: Automatic switching under 2 lux
- Schedule: Switching will follow fixed set times
- Digital input: If the digital input is closed, the night mode will be activated.
- Day mode: manual activation of the day mode
- Night mode: manual activation of the night mode



Exposure level: 3
Enable AGC: MAX
Exposure mode
● AES
○ ALC Shutter Speed: 1/120(1/100)sec
□ Low Lux mode
□ Enable BLC
☑ Switch to B/W in night mode
IR cut filter: Auto

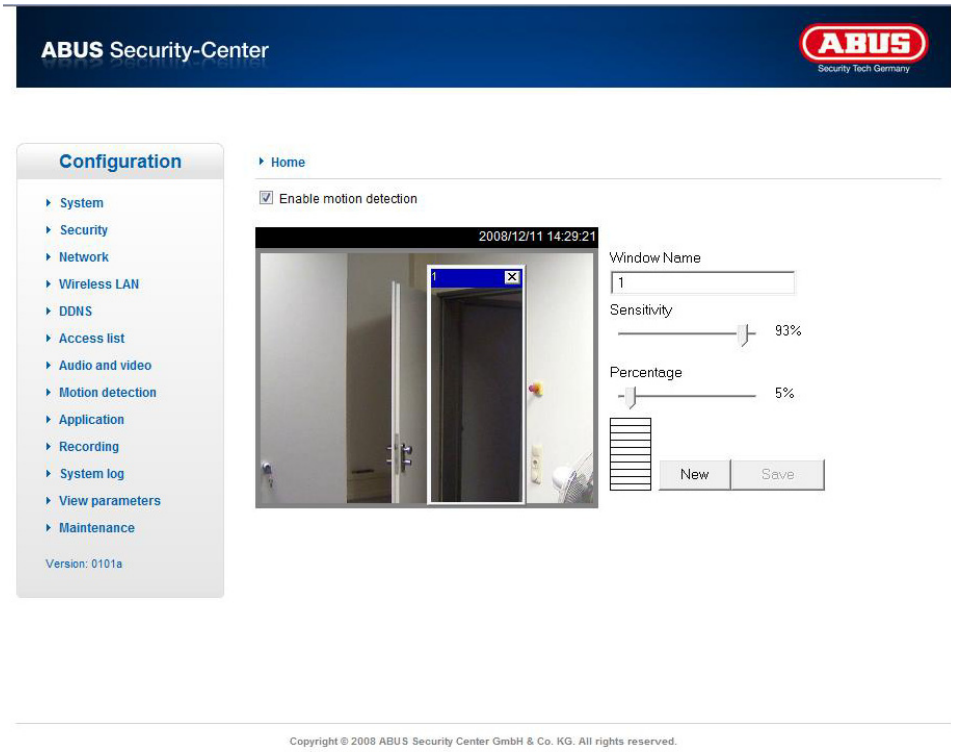
Audio settings

“Audio settings” Select the audio type and a bit rate.
“AAC” (Advanced Audio Coding) Special codec for audio data compression under MPEG4.
“GSM-AMR” (Global System for Mobile Communications – Adaptive Multi Rate) Voice codec in GSM mobile telephone network.

Motion sensor

“**Enable motion detection**” Enables motion detection.
“**New**” Adds a new window. A maximum of three windows can be open simultaneously. To resize the window or move the title bar, click the window frame, keep the mouse button pressed and drag the window to the required size. Close the window by clicking the “x” in the top right corner.
“**Save**” Click this button to save window settings. A bar graph rises or falls according to the picture variation. A green bar means that the picture variation is below the surveillance level, while a red bar means that the picture variation is above the surveillance level. If the bar is red, the detected window appears with a red frame. When you return to the homepage, the monitored window is hidden. As soon as motion is detected, the red frame is displayed.
“**Window name**” The text appears at the top of the window.
“**Sensitivity**” Sensitivity in changes of picture sequence (e.g.: sensitivity high: triggering by slight picture change).
“**Percentage**” Detectable object size (low: small objects are detected; high: only large objects are detected)

This figure shows the screen after you click “**Save**”.



☑ Enable motion detection

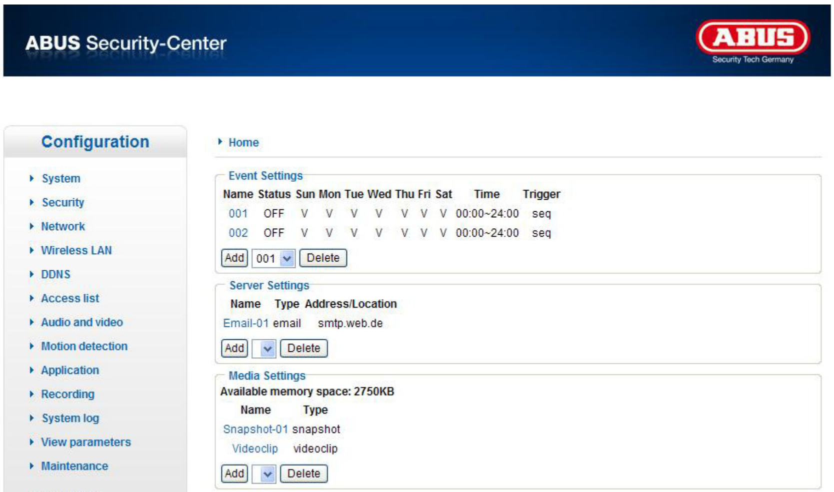
Window Name: 1

Sensitivity: 93%

Percentage: 5%

Application

There are 3 sections in application page: Event, Server and Media Settings.
To create an application event the basic order for configuration is: Media -> Server -> Event.
There can be setup at most 3 events, 5 servers and 5 medias.



Event Settings

Name	Status	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Time	Trigger
001	OFF	V	V	V	V	V	V	V	00:00~24:00	seq
002	OFF	V	V	V	V	V	V	V	00:00~24:00	seq

Server Settings

Name	Type	Address/Location
Email-01	email	smtp.web.de

Media Settings

Available memory space: 2750KB

Name	Type
Snapshot-01	snapshot
Videoclip	videoclip

<URL> http://<Videoserver>/setup/application.html

Media

Media name The unique name for the media.
There are 3 kind of media: Snapshot, video clip and system log.

Snapshot

Source The source of stream: stream 1 or stream 2
Send pre-event images The number of pre-event images.
Send post-event images The number of post-event images.
File name prefix The prefix name will be added to the file name of the snapshot images.

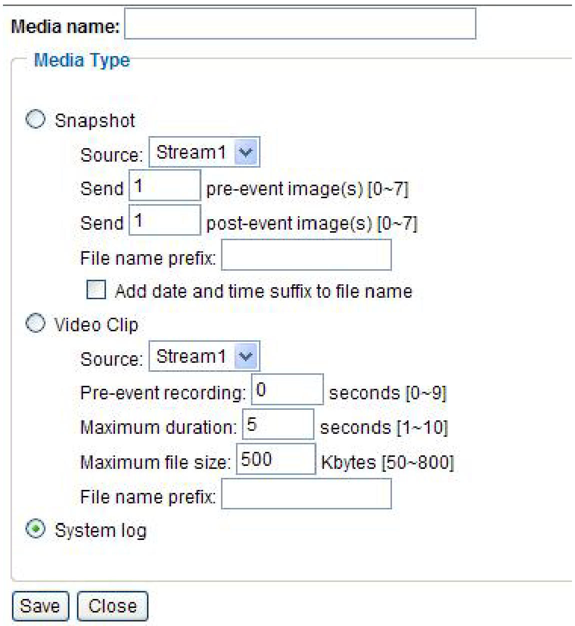
Video clip

Source The source of the stream: stream 1 or stream 2
Pre-event recording The interval of pre-event recording in seconds
There are 2 limitations for the video clip file.

Maximum duration The maximum recording file duration in seconds
Maximum file size The maximum file size that would be generated
File name prefix The prefix name will be added to the file name of the video file.

System log

Will send the current status log file.



Media name:

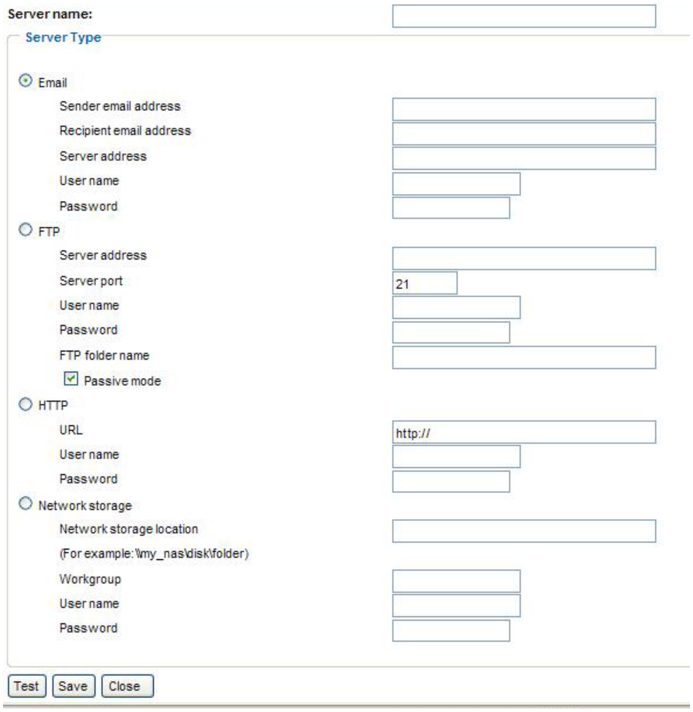
Media Type

○ Snapshot
Source: Stream1
Send 1 pre-event image(s) [0~7]
Send 1 post-event image(s) [0~7]
File name prefix:
□ Add date and time suffix to file name

○ Video Clip
Source: Stream1
Pre-event recording: 0 seconds [0~9]
Maximum duration: 5 seconds [1~10]
Maximum file size: 500 Kbytes [50~800]
File name prefix:

● System log

Server



Server name:

Server Type

● Email

Sender email address

Recipient email address

Server address

User name

Password

○ FTP

Server address

Server port 21

User name

Password

FTP folder name

☑ Passive mode

○ HTTP

URL http://

User name

Password

○ Network storage

Network storage location

(For example: \\my_nas\disk\folder)

Workgroup

User name

Password

Server name The unique name for a server. There are four kind of servers supported. Those are email server, FTP server, HTTP server and network storage.

Email Server

Sender email address The email address of the sender
Recipient email address The email address of the recipient
Server address The domain name or IP address of the external email server.
User name This granted user name on the external email server.
Password This granted password on the external email server.

FTP Server

Server address The domain name or IP address of the external FTP server.
Server port This can be other than the default port 21. The user can change this value from 1025 – 65535.
User name This granted user name on the external FTP server.
Password This granted password on the external FTP server.
Remote folder name Granted folder on the external FTP server. The string must be conform to that of the external FTP server. Some FTP servers cannot accept preceding slash symbol in front of the path without virtual path mapping. Refer to the instructions for the external FTP server for details. The folder privilege must be open for upload
Passive mode Check it to enable passive mode in transmission.

HTTP Server

URL The URL to upload the media.
User name This granted user name on the external HTTP server.
Password This granted password on the external HTTP server.

Network Storage

Network storage location The path to upload the media.
Workgroup The workgroup for network storage.
User name This granted user name on the network storage.
Password This granted password on the network storage.

After input the settings of server, user can click “Test” to test whether the setting is correct. The testing result will be shown in a pop-up window.

After input the settings of server, user can click “Test” to test whether the setting is correct. The testing result will be shown in a pop-up window.

Event

Event name The unique name for an event.
Enable this event Check it to enable this event.
Priority The event with higher priority will be executed first.
Delay second(s) before detecting next event The delay to check next event. It is used in motion detection and digital input trigger type.

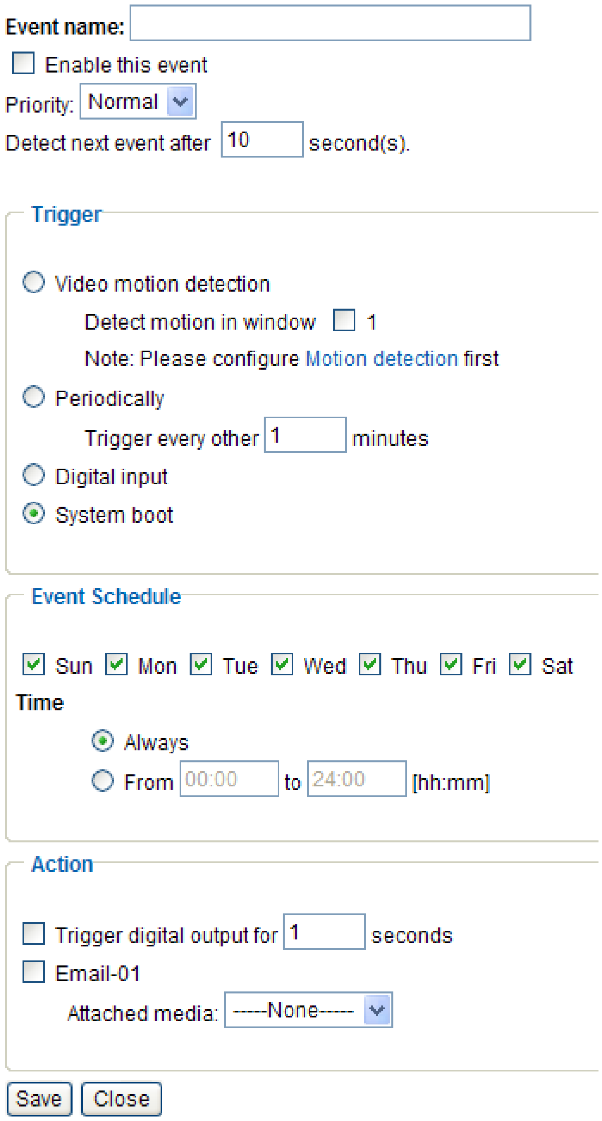
The videoserver supports 3 different trigger types:
Video motion detection Select the windows which need to be monitored.
Periodic The event is triggered in specific intervals. The unit of trigger interval is minute.
System boot The event is triggered when the system boot up.

Event schedule

Sun ~ Sat Select the days of the week to perform the event.
Time show **Always** or input the time interval.

Action

Server name Check it to send the selected media when event was triggered.



Event name:

□ Enable this event

Priority: Normal

Detect next event after 10 second(s).

Trigger

○ Video motion detection

Detect motion in window □ 1

Note: Please configure Motion detection first

○ Periodically

Trigger every other 1 minutes

○ Digital input

● System boot

Event Schedule

☑ Sun ☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri ☑ Sat

Time

● Always

○ From 00:00 to 24:00 [hh:mm]

Action

□ Trigger digital output for 1 seconds

□ Email-01

Attached media: -----None-----

Recording

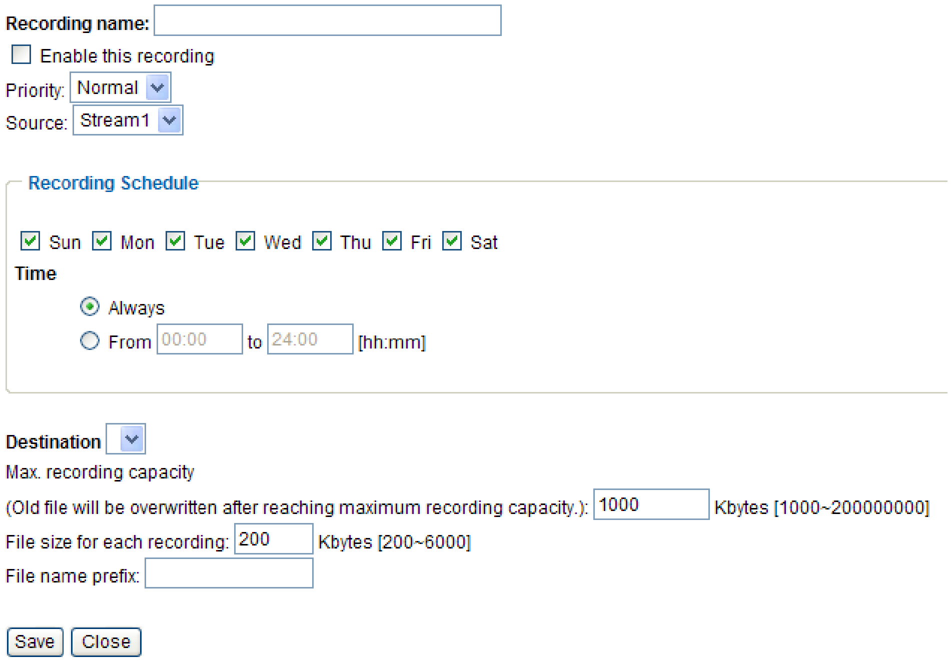
The network camera supports recording on network storage. The operation of editing recording item is the same as the one in the application page. User can define the recording name, status, weekly and time schedule, stream source and destination of recording. There can be at most 2 recording entries.

⚠ To do recording on network storage, please add network storage server in application page first.

Recording entry name The unique name for the recording entry.
Enable this recording Check it to enable this event.
Priority The recording with higher priority will be executed first.
Source The source of the stream: stream 1 or stream 2.

Schedule

Sun ~ Sat Select the days of the week to perform the event.
Time shows "**Always**" or input the time interval.
Destination Network storage server from application page.
Total cycle recording size The total size for cycle recording in Kbytes.
Size of each file for recording The single file size in Kbytes.
File name prefix The prefix name will be added on the file name of the recording.



Recording name:
□ Enable this recording
Priority: Normal
Source: Stream1

Recording Schedule

☑ Sun ☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri ☑ Sat
Time
● Always
○ From 00:00 to 24:00 [hh:mm]

Destination
Max. recording capacity
(Old file will be overwritten after reaching maximum recording capacity.): 1000 Kbytes [1000~200000000]
File size for each recording: 200 Kbytes [200~6000]
File name prefix:

<URL> http://<network camera>/setup/recording.html

When click on destination, a page appears listing all *.mp4 files in this destination. User can select some files to delete or delete all files.

Viewing the log file

Click this link on the configuration page to display the system log file. The contents of the file supply useful information about the configuration and the connection following a system start. The standard of the log file is RFC 3164. You can also send data to a log server. Enable “Remote Protocol” and enter the IP address and the port number of the server.

Viewing parameters

Click this link on the configuration page to display all system parameter sets. The contents correspond to those of CONFIG.INI.

Maintenance

Reboot system

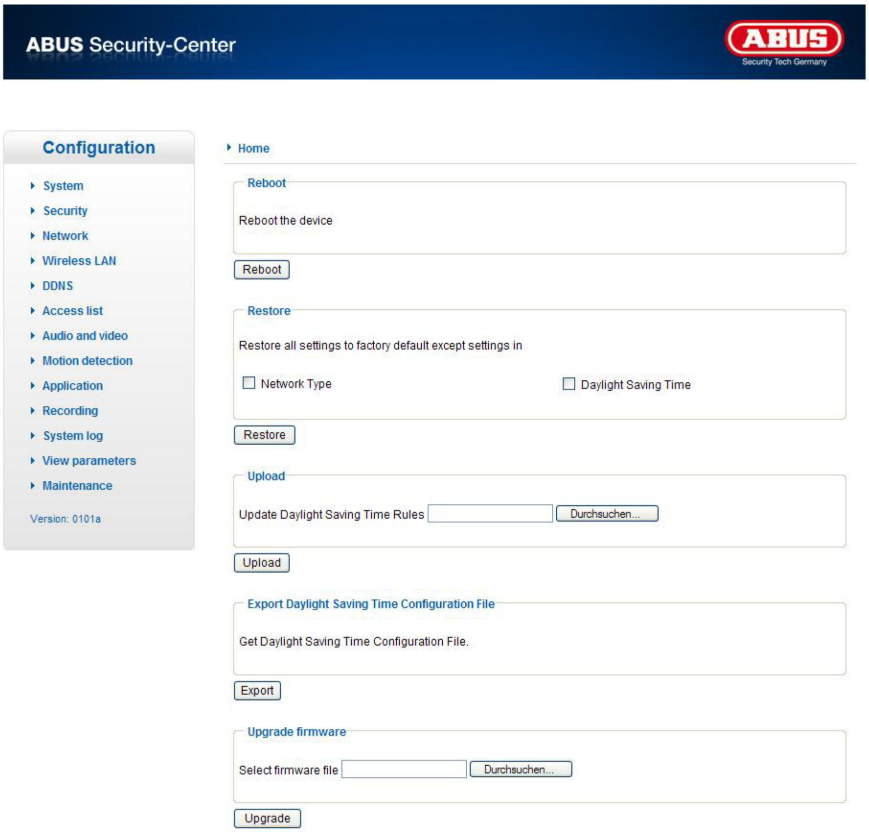
Click to reboot the system.

Factory default

Click to restore the factory settings. All previous settings are discarded.

Upgrade firmware

Like an update with the installation wizard, you can update the firmware of the network camera here. You can download the latest firmware from www.abus-sc.com. Select the update file (flash.bin) and click “Upgrade”. The update takes a short time. When you restart the camera, it is started with the new firmware.



Reboot

Reboot the device

Restore

Restore all settings to factory default except settings in

□ Network Type □ Daylight Saving Time

Upload

Update Daylight Saving Time Rules

Export Daylight Saving Time Configuration File

Get Daylight Saving Time Configuration File.

Upgrade firmware

Select firmware file

Appendix

A. Troubleshooting

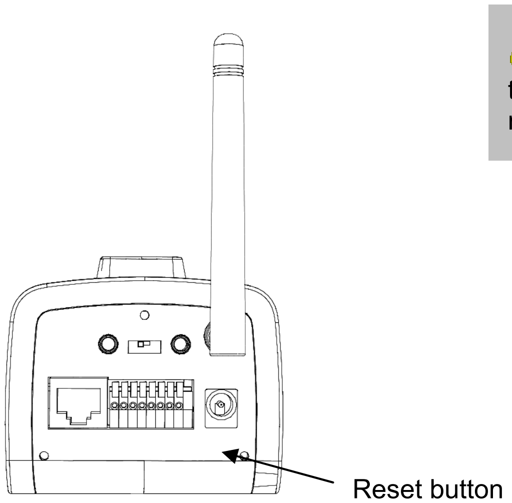
Status LEDs

Condition / LED Color	Green	Red
System start	On	1/s (once)
During boot up	Off	1/s
Network search/setup	On	Off
Network ok	1/s	On
During Firmware Upgrade	1/s	0.1/s

Resetting and restoring

At the back side of the netzwork camera is a button. Press this button to reset the system or restore the factory parameter settings. Sometimes the normal system status can be restored by a reset. If you have further problems following a reset, restore the factory parameter settings and reinstall and reconfigure the system.

⚠ If the factory parameter settings are restored, all the previous settings are deleted. The system can be reset or restored.



RESET:
Press the reset button with a pointed object.

RESTORE:
1. Press the button continuously with a pointed object.
2. Wait until the LEDs blink fast.
3. Release the reset button.

B. Frequently asked questions (FAQ)

Q. What do I do if I forget my password?
A. Every access to the network camera requires an authentication. If you are one of the managing users, ask your administrator for your password. If you are the administrator, there is no way of reactivating the root password. The only way of accessing the network camera is to press the reset button on the rear of the camera to restore the factory-set parameters and then reconfigure the system.

Q. Why does no video appear from the network camera following authentication?
A. This problem can be caused by various factors:
1. If you have just installed the network camera and see no video, check the video modulation on the configuration page.
2. Reduce the security level of the Internet Explorer to enable installation of the plug-ins.
3. If this problem recurs, the users are possibly working at a higher level than is permitted by the system.

Q. What is the plug-in for?
A. The plug-in provided by the network camera is used for showing video streams in the Internet Explorer. If your system does not permit the installation of plug-in software, reduce the security level of the web browser. Consult your network administrator.

Q. Why is there a difference between the timestamp and the system time of the PC/notebook?
A. The timestamp is based on the system time of the network camera. This is supplied by an internal realtime clock and can automatically be synchronised with a time server if the network camera is connected to the Internet and the function is enabled. Differences of an hour or more are caused by the time zone setting.

Q. Why is the picture not refreshed regularly?
A. If you use a modem, the bandwidth of the PPP connection is much less that with an Ethernet connection. If the timestamp difference is unstable, reduce the UART FIFO for reception and transmission under Modem Properties in the Control Panel. If you use the Ethernet, the reason may be the length of time required to store snapshots in memory after an event occurs.

Q. How many users can watch the video simultaneously?
A. The number of users is restricted to 20. However, the video quality depends on the network bandwidth.

Q. How fast is the video rate of the network cameras?
A. The MPEG4 Codec can internally process 30 frames a second. However, the overall quality depends on various coefficients.
1. Data throughput in the network
2. Shared bandwidth
3. Number of users
4. The visible “complicated” objects result in large image files.
5. The settings on your PC that are responsible for displaying pictures.
The transmission rate of a normal local network can reach over 200 kilobytes per second and approximately 10 to 20 frames per second.

Q. How can I keep access to video streams of the network camera as secure as possible?
A. The network camera was developed for surveillance purposes and has many flexible interfaces. User authentication and special confirmation during installation can prevent unauthorised access to the network camera. You can also change the HTTP port to a non-public number. Check the system log for abnormal activities and their causes.

Q. How fast can the network camera check the state of the digital inputs?
A. The network camera checks the input state in less than half a second. However, to avoid the conditions of a repeated check and ensure a correct functioning of equipment connected to the digital outputs, the network camera delays for 3 seconds after each adaptation of the condition. You can modify this according to your own specific applications. During this period, other conditions are ignored.

Q. Why is access to the network camera not possible while I am setting options in the application?
A. If the network cameras are started by events, snapshots need more time since they are written to memory. If the events occur too often, the system is constantly trying to store the pictures. If an event occurs very frequently, use sequential mode or an external recording program to record the pictures. If you want to access the pictures via FTP, the parameter can be set lower since FTP responds faster than the web. If the system is busy with configuration, press the reset button to restore the factory settings and store the system.

Q. The camera was correctly configured, but access to the camera via the http protocol or the RTSP protocol is denied.
A. Make sure that the corresponding ports (default: Port 80 or 554) in any routers used or the firewall are released (shared). Test the network protocol “Ping” (Windows command line input: ping <IP address>).

Q. The network camera is connected to the network via a router, but access to the camera is denied.
A. If you want to connect the camera via a router (gateway), you have to define the gateway IP (standard router). You can only do this if you first connect the camera direct via a cross-link cable and then configure it.

Q. The network camera is located behind a router with a local IP. How can I access this camera from the Internet?
A. The router receives a public IP, accessible to anyone, when you dial via the modem (e.g. DSL). Forwarding – e.g., of an http query from the Internet – is directed first to this public IP. The router must now be configured so that this query is forwarded to the local IP. Look up the following terms in your router manual: NAT (Network Address Translation, IP forwarding, IP Server).

C. URL-Commands

Style convention

In URL syntax and in descriptions of CGI parameters, a text within angle brackets denotes a content that is to be replaced with either a value or a string. When replacing the text string also the angle brackets shall be replaced. An example of this is the description of the name for the server, denoted with <servername> in the URL syntax description below, that is replaced with the string myserver in the URL syntax example, also below.

URL syntax' are written with the “**Syntax:**" word written in bold face followed by a box with the referred syntax as seen below. The name of the server is written as <servername>. This is intended to be replaced with the name of the actual server. This can either be a name, e.g., "mywebcam" or "thecam.adomain.net" or the associated IP number for the server, e.g., 192.168.0.220.

Special note will be marked as RED words to take care.

Syntax:

```
http://<servername>/cgi-bin/viewer/video.jpg
```

Description of returned data is written with "**Return:**" in bold face followed by the returned data in a box. All data returned as HTTP formatted, i.e., starting with the string HTTP is line separated with a Carriage Return and Line Feed (CRLF) printed as \r\n.

Return:

```
HTTP/1.0 <HTTP code> <HTTP text>\r\n
```

URL syntax examples are written with "**Example:**" in bold face followed by a short description and a light grey box with the example.

Example: request a single snapshot image

```
http://mywebserver/cgi-bin/viewer/video.jpg
```

General CGI URL syntax and parameters

CGI parameters are written in lower-case and as one word without any underscores or other separators. When the CGI request includes internal camera parameters, the internal parameters must be written exactly as they are named in the camera or video server. The CGIs are organized in function related directories under the cgi-bin directory. The file extension of the CGI is required.

Syntax:

```
http://<servername>/cgi-bin/<subdir>[/<subdir>...]/<cgi>.<ext>

[?<parameter>=<value>[&<parameter>=<value>...]]
```

Example: Setting digital output #1 to active

```
http://mywebserver/cgi-bin/dido/setdo.cgi?do1=1
```

Security level

SECURITY LEVEL	SUB-DIRECTORY	DESCRIPTION
0	anonymous	Unprotected.
1 [view]	anonymous, viewer, dido, camctrl	1. Can view, listen, talk to camera 2. Can control dido, ptz of camera
4 [operator]	anonymous, viewer, dido, camctrl, operator	Operator's access right can modify most of camera's parameters except some privilege and network options
6 [admin]	anonymous, viewer, dido, camctrl, operator, admin	Administrator's access right can fully control the camera's operation.
7	N/A	Internal parameters. Unable to be changed by any external interface.

Get server parameter values

Note: The access right depends on the URL directory.

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/anonymous/getparam.cgi?[<parameter>]

[&<parameter>…]


http://<servername>/cgi-bin/viewer/getparam.cgi?[<parameter>]

[&<parameter>…]


http://<servername>/cgi-bin/operator/getparam.cgi?[<parameter>]

[&<parameter>…]


http://<servername>/cgi-bin/admin/getparam.cgi?[<parameter>]

[&<parameter>…]
```

where the *<parameter>* should be *<group>*[_*<name>*] or *<group>*[.*<name>*] If you do not specify the any parameters, all the parameters on the server will be returned. If you specify only *<group>*, the parameters of related group will be returned.

When query parameter values, the current parameter value are returned.

Successful control request returns paramter pairs as follows.

Return:

```
HTTP/1.0 200 OK\r\n

Content-Type: text/html\r\n

Context-Length: <length>\r\n

\r\n

<parameter pair>
```

where <parameter pair> is

<parameter>=<value>\r\n

[<parameter pair>]

<length> is the actual length of content.

Example: request IP address and it’s response

```
Request:

http://192.168.0.123/cgi-bin/admin/getparam.cgi?network_ipaddress



Response:

HTTP/1.0 200 OK\r\n

Content-Type: text/html\r\n

Context-Length: 33\r\n

\r\n

network.ipaddress=192.168.0.123\r\n
```

Set server parameter values

Note: The access right depends on the URL directory.

Method: GET/POST

Syntax:

http://<*servername*>/cgi-bin/anonymous/setparam.cgi? <*parameter*>=<*value*>

[&<parameter>=<value>…][&update=<value>][&return=<return page>]

http://<*servername*>/cgi-bin/viewer/setparam.cgi? <*parameter*>=<*value*>

[&<parameter>=<value>…][&update=<value>] [&return=<return page>]

http://<*servername*>/cgi-bin/operator/setparam.cgi? <*parameter*>=<*value*>

[&<parameter>=<value>…][&update=<value>] [&return=<return page>]

http://<*servername*>/cgi-bin/admin/setparam.cgi? <*parameter*>=<*value*>

[&<parameter>=<value>…][&update=<value>] [&return=<return page>]

PARAMETER	VALUE	DESCRIPTION
<group>_<name>	value to assigned	Assign <*value*> to the parameter <*group*>_<*name*>
update	<boolean>	set to 1 to actually update all fields (no need to use update parameter in each group)
return	<return page>	Redirect to the page <*return page*> after the parameter is assigned. The <*return page*> can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page. (note: The return page can be a general HTML file(.htm, .html) or a Vivotek server script executable (.vspx) file. It can not be a CGI command. It can not have any extra parameters. This parameter must be put at end of parameter list)

Return:

```
HTTP/1.0 200 OK\r\n

Content-Type: text/html\r\n

Context-Length: <length>\r\n

\r\n

<parameter pair>
```

where <parameter pair> is

<parameter>=<value>\r\n

[<parameter pair>]

Only the parameters that you set and readable will be returned.

Example: Set the IP address of server to 192.168.0.123

Request:

http://myserver/cgi-bin/admin/setparam.cgi?network_ipaddress=192.168.0.123

Response:

```
HTTP/1.0 200 OK\r\n
Content-Type: text/html\r\n
Context-Length: 33\r\n
\r\n
network.ipaddress=192.168.0.123\r\n
```

Available parameters on the server

Valid values:

VALID VALUES	DESCRIPTION
string[<n>]	Text string shorter than ‘n’ characters
password[<n>]	The same as string but display ‘*’ instead
integer	Any number between (-2^{31} – 1) and (2^{31} – 1)
positive integer	Any number between 0 and (2^{32} – 1)
<m> ~ <n>	Any number between ‘m’ and ‘n’
domain name[<n>]	A string limited to contain a domain name shorter than ‘n’ characters (eg. www.ibm.com)
email address [<n>]	A string limited to contain a email address shorter than ‘n’ characters (eg. joe@www.ibm.com)
ip address	A string limited to contain an ip address (eg. 192.168.1.1)
mac address	A string limited to contain mac address without hyphen or colon connected
boolean	A boolean value 1 or 0 represents [Yes or No], [True or False], [Enable or

	Disable].
<value1>, <value2>, <value3>, …	Enumeration. Only given values are valid.
blank	A blank string
everything inside <>	As description

NOTE: The camera should prevent to restart when parameter changed.

Group: **system**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
hostname	string[40]	1/6	host name of server
ledoff	<boolean>	6/6	turn on(0) or turn off(1) all led indicators
date	<yyyy/mm/dd>, keep, auto	6/6	Current date of system. Set to 'keep' keeping date unchanged. Set to 'auto' to use NTP to synchronize date.
time	<hh:mm:ss>, keep, auto	6/6	Current time of system. Set to 'keep' keeping time unchanged. Set to 'auto' to use NTP to synchronize time.
ntp	<domain name>, <ip address>, <blank>	6/6	NTP server
timezoneindex	-489 ~ 529	6/6	Indicate timezone and area -480: GMT-12:00 Eniwetok, Kwajalein -440: GMT-11:00 Midway Island, Samoa -400: GMT-10:00 Hawaii

			-360: GMT-09:00 Alaska -320: GMT-08:00 Las Vegas, San_Francisco, Vancouver -280: GMT-07:00 Mountain Time, Denver -281: GMT-07:00 Arizona -240: GMT-06:00 Central America, Central Time, Mexico City, Saskatchewan -200: GMT-05:00 Eastern Time, New York, Toronto -201: GMT-05:00 Bogota, Lima, Quito, Indiana -160: GMT-04:00 Atlantic Time, Canada, Caracas ,La Paz, Santiago -140: GMT-03:30 Newfoundland -120: GMT-03:00 Brasilia, Buenos Aires, Georgetown, Greenland -80: GMT-02:00 Mid-Atlantic -40: GMT-01:00 Azores, Cape_Verde_IS. 0: GMT Casablanca, Greenwich Mean Time:Dublin, Edinburgh, Lisbon, London 40: GMT 01:00 Amsterdam, Berlin, Rome, Stockholm, Vienna, Madrid, Paris 41: GMT 01:00 Warsaw, Budapest, Bern 80: GMT 02:00 Athens, Helsinki, Istanbul, Riga 81: GMT 02:00 Cairo 82: GMT 02:00 Lebanon, Minsk

			83: GMT 02:00 Israel 120: GMT 03:00 Baghdad, Kuwait, Riyadh, Moscow, St. Petersburg, Nairobi 121: GMT 03:00 Iraq 140: GMT 03:30 Tehran 160: GMT 04:00 Abu Dhabi, Muscat, Baku, Tbilisi, Yerevan 180: GMT 04:30 Kabul 200: GMT 05:00 Ekaterinburg, Islamabad, Karachi, Tashkent 220: GMT 05:30 Calcutta, Chennai, Mumbai, New Delhi 230: GMT 05:45 Kathmandu 240: GMT 06:00 Almaty, Novosibirsk, Astana, Dhaka, Sri Jayawardenepura 260: GMT 06:30 Rangoon 280: GMT 07:00 Bangkok, Hanoi, Jakarta, Krasnoyarsk 320: GMT 08:00 Beijing, Chongging, Hong Kong, Kuala Lumpur, Singapore, Taipei 360: GMT 09:00 Osaka, Sapporo, Tokyo, Seoul, Yakutsk 380: GMT 09:30 Adelaide, Darwin 400: GMT 10:00 Brisbane, Canberra, Melbourne, Sydney, Guam, Vladivostok 440: GMT 11:00 Magadan, Solomon

			Is., New Caledonia 480: GMT 12:00 Aucklan, Wellington, Fiji, Kamchatka, Marshall Is. 520: GMT 13:00 Nuku'Alofa
updateinterval	0, 3600, 86400, 604800, 2592000	6/6	0 to Disable automatic time adjustment, otherwise, it means the seconds between NTP automatic update interval.
restore	0, <positive integer>	7/6	Restore the system parameters to default value. Restart the server after <value> seconds.
reset	0, <positive integer>	7/6	Restart the server after <value> seconds.
restoreexceptnet	0, <positive integer>	7/6	Restore the system parameters to default value except (ipaddress, subnet, router, dns1, dns2, ddns settings). Restart the server after <value> seconds.

SubGroup of **system**: **info** (The fields in this group are unchangeable.)

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
modelname	string[40]	0/7	model name of server
serialnumber	<mac address>	0/7	12 characters mac address without hyphen connected
firmwareversion	string[40]	0/7	The version of firmware, including model, company, and version number in the format <MODEL-BRAND-VERSION>
language_default	string[16]	0/7	Default webpage language.
language_count	<integer>	0/7	number of webpage language available on the server
language_i<0~(count-	string[16]	0/7	Available language lists

1)>			

Group: **status**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
di_i<0~(ndi-1)>	<boolean>	1/7	0 => Inactive, normal 1 => Active, triggered
do_i<0~ndi-1)>	<boolean>	1/1	0 => Inactive, normal 1 => Active, triggered
onlinenum_rtsp	integer	6/7	current RTSP connection numbers
onlinenum_httppush	integer	6/7	current HTTP push server connection numbers

Group: **di_i<0~(ndi-1)>**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
normalstate	high, low	1/1	indicate whether open circuit or closed circuit represents inactive status

Group: **do_i<0~(ndo-1)>**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
normalstate	open, grounded	1/1	indicate whether open circuit or closed circuit represents inactive status

Group: security

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
user_i0_name	string[64]	6/7	User’s name of root
user_i<1~20>_name	string[64]	6/7	User’s name

user_i0_pass	string [64]	6/6	Root’s password
user_i<1~20>_pass	string [64]	7/6	User’s password
user_i0_privilege	admin	6/7	Root’s privilege
user_i<1~20>_ privilege	viewer, operator, admin	6/6	User’s privilege.

Group: **network**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
type	lan, pppoe	6/6	Network connection type
resetip	<boolean>	6/6	1 => get ipaddress, subnet, router, dns1, dns2 from DHCP server at next reboot 0 => use preset ipaddress, subnet, rounter, dns1, and dns2
ipaddress	<ip address>	6/6	IP address of server
subnet	<ip address>	6/6	subnet mask
router	<ip address>	6/6	default gateway
dns1	<ip address>	6/6	primary DNS server
dns2	<ip address>	6/6	secondary DNS server
wins1	<ip address>	6/6	primary WINS server
wins2	<ip address>	6/6	secondary WINS server

Subgroup of **network**: **ftp**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
port	21, 1025~65535	6/6	local ftp server port

Subgroup of **network**: **http**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
port	80, 1025 ~ 65535	6/6	HTTP port
alternateport	1025~65535	6/6	Alternative HTTP port
authmode	basic, digest	1/6	HTTP authentication mode
s0_accessname	string[32]	1/6	Http server push access name for stream 1
s1_accessname	string[32]	1/6	Http server push access name for stream 2

Subgroup of **network**: **rtsp**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
port	554, 1025 ~ 65535	6/6	RTSP port
authmode	disable, basic, digest	1/6	RTSP authentication mode
s0_accessname	string[32]	1/6	RTSP access name for stream1
s1_accessname	string[32]	1/6	RTSP access name for stream2

Subgroup of **rtsp_s<0~(n-1)>**: **multicast,** n is stream count

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
alwaysmulticast	<boolean>	4/4	Enable always multicast
ipaddress	<ip address>	4/4	Multicast IP address
videoport	1025 ~ 65535	4/4	Multicast video port

audioport	1025 ~ 65535	4/4	Multicast audio port
ttl	1 ~ 255	4/4	Mutlicast time to live value

Subgroup of **network**: **rtp**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
videoport	1025 ~ 65535	6/6	video channel port for RTP
audioport	1025 ~ 65535	6/6	audio channel port for RTP

Subgroup of **network**: **pppoe**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
user	string[128]	6/6	PPPoE account user name
pass	password[64]	6/6	PPPoE account password

Group: ipfilter

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
allow_i<0~9>_start	1.0.0.0 ~ 255.255.255.255	6/6	Allowed starting IP address for RTSP connection
allow_i<0~9>_end	1.0.0.0 ~ 255.255.255.255	6/6	Allowed ending IP address for RTSP connection
deny_i<0~9>_start	1.0.0.0 ~ 255.255.255.255	6/6	Denied starting IP address for RTSP connection
deny_i<0~9>_end	1.0.0.0 ~ 255.255.255.255	6/6	Denied ending IP address for RTSP connection

Group: **videoin**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
freq	50, 60	4/4	frequency

whitebalance	auto, indoor, fluorescent, outdoor	4/4	auto, auto white balance indoor, 3200K fluorescent, 5500K outdoor, > 5500K

Group: **videoin_c<0~(n-1)>** for n channel products, m is stream number

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
color	0, 1	4/4	0 =>monochrome 1 => color
flip	<boolean>	4/4	flip the image
mirror	<boolean>	4/4	mirror the image
ptzstatus	<integer>	1/7	An 32-bits integer, each bit can be set separately as follows: Bit 0 => Support camera control function 0(not support), 1(support) Bit 1 => **Build-in** or **external** camera. 0(external), 1(build-in) Bit 2 => Support **pan** operation. 0(not support), 1(support) Bit 3 => Support **tilt** operation. 0(not support), 1(support) Bit 4 => Support **zoom** operation. 0(not support), 1(support) Bit 5 => Support **focus** operation. 0(not support), 1(support)
text	string[16]	4/4	enclosed caption
imprinttimestamp	<boolean>	4/4	Overlay time stamp on video
maxexposure	1~120	4/4	Maximum exposure time
s<0~(m-1)>_codectype	mpeg4, mjpeg	4/4	video codec type
s<0~(m-1)>_keyinterval	1, 3, 5, 10, 30, 60, 90, 120	4/4	Key frame interval
s<0~(m-1)>_resolution	176x144, 320x240,	4/4	Video resolution in pixel

	640x480,,		
s<0~(m-1)>_ratecontrolmode	cbr, vbr	4/4	cbr, constant bitrate vbr, fix quality
s<0~(m-1)>_quant	1, 2, 3, 4, 5	4/4	quality of video when choosing vbr in "ratecontrolmode". 1 is worst quality and 5 is the best quality.
s<0~(m-1)>_bitrate	20000, 30000, 40000, 50000, 64000, 128000, 256000, 384000, 512000, 768000, 1000000, 1200000, 1500000, 2000000, 3000000, 4000000	4/4	set bit rate in bps when choose cbr in "ratecontrolmode"
s<0~(m-1)>_maxframe	1, 2, 3, 5, 10, 15, 20, 25, 30 (only for NTSC or 60Hz)	4/4	set maximum frame rate in fps
s<0~(m-1)>_forcei	1	7/6	Force I frame

Group: **audioin_c<0~(n-1)>** for n channel products

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
source	micin,	4/4	micin => use external microphone

	linein		input linein => use line input, i.e. internal microphone
mute	0, 1	4/4	Enable audio mute
gain	0~31	4/4	Gain of input
boostmic	0, 1	4/4	Enable microphone boost
s<0~(m-1)>_codectype	aac4, gamr	4/4	set audio codec type for input
s<0~(m-1)>_aac4_bitrate	16000, 32000, 48000, 64000, 96000, 128000	4/4	set AAC4 bitrate in bps
s<0~(m-1)>_gamr_bitrate	4750, 5150, 5900, 6700, 7400, 7950, 10200, 12200	4/4	set AMR bitrate in bps

Group: **image_c<0~(n-1)>** for n channel products

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
brightness	-5 ~ 5	4/4	Adjust brightness of image according to mode settings.
saturation	-5 ~ 5	4/4	Adjust saturation of image according to mode settings.
contrast	-5 ~ 5	4/4	Adjust contrast of image according to

			mode settings.
hue	-5 ~ 5	4/4	Adjust hue of image according to mode settings.

Group: **motion_c<0~(n-1)>** for n channel product

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean>	4/4	enable motion detection
win_i<0~2>_enable	<boolean>	4/4	enable motion window 1~3
win_i <0~2>_name	string[14]	4/4	name of motion window 1~3
win_i <0~2>_left	0 ~ 320	4/4	Left coordinate of window position.
win_i <0~2>_top	0 ~ 240	4/4	Top coordinate of window position.
win_i <0~2>_width	0 ~ 320	4/4	Width of motion detection window.
win_i<0~2>_height	0 ~ 240	4/4	Height of motion detection window.
win_i<0~2>_objsize	0 ~ 100	4/4	Percent of motion detection window.
win_i<0~2>_sensitivity	0 ~ 100	4/4	Sensitivity of motion detection window.

Group: **ddns**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean>	6/6	Enable or disable the dynamic dns.

provider	Safe100,
	DyndnsDynamic,
	DyndnsCustom,
	TZO,
	DHS,
	DynInterfree,
	PeanutHull,
	CustomSafe100
		6/6	Safe100 => safe100.net
			DyndnsDynamic => dyndns.org (dynamic)
			DyndnsCustom => dyndns.org (custom)
			TZO => tzo.com
			DHS => dhs.org
			DynInterfree =>dyn-interfree.it
			PeanutHull => peanut hull
			CustomSafe100 =>

			Custom server using safe100 method
<provider>_hostname	string[128]	6/6	Your dynamic hostname.
<provider>_username email	string[64]	6/6	Your user or email to login ddns service provider
<provider>_passwordkey	string[64]	6/6	Your password or key to login ddns service provider
<provider>_servername	string[128]	6/6	The server name for safe100. (This field only exists for provider is customsafe100)

Group: upnppresentation

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean>	6/6	Enable or disable the UPNP presentation service.

Group: upnpportforwarding

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean>	6/6	Enable or disable the UPNP port forwarding service.
upnpnatstatus	0~3	6/7	The status of UpnP port forwarding, used internally. 0 is OK, 1 is FAIL, 2 is no IGD router, 3 is no need to do port forwarding

Group: **syslog**

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enableremotelog	<boolean>	6/6	enable remote log
serverip	<IP address>	6/6	Log server IP address
serverport	514, 1025~65535	6/6	Server port used for log
level	0~7	6/6	The levels to distinguish the

			importance of information. 0: LOG_EMERG 1: LOG_ALERT 2: LOG_CRIT 3: LOG_ERR 4: LOG_WARNING 5: LOG_NOTICE 6: LOG_INFO 7: LOG_DEBUG

Group: **privacymask_c<0~(n-1)>** for n channel product

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
enable	<boolean>	4/4	Enable the privacy mask
win_i<0~4>_enable	<boolean>	4/4	Enable the privacy mask window
win_i<0~4>_name	string[14]	4/4	The name of privacy mask window
win_i<0~4>_left	0 ~ 320/352	4/4	Left coordinate of window position.
win_i<0~4>_top	0 ~ 240/288	4/4	Top coordinate of window position.
win_i<0~4>_width	0 ~ 320/352	4/4	Width of privacy mask window
win_i<0~4>_height	0 ~ 240/288	4/4	Height of privacy mask window

Group: capability

NAME	VALUE	SECURITY (get/set)	DESCRIPTION
api_http_version	0200a	0/7	The HTTP API version.
bootuptime	<positive integer>	0/7	The server bootup time
nir	0, <positive integer>	0/7	number of IR interface
ndi	0, <positive integer>	0/7	number of digital input

ndo	0, <positive integer>	0/7	number of digital output
naudioin	0, <positive integer>	0/7	number of audio input
naudioout	0, <positive integer>	0/7	number of audio output
nvideoin	<positive integer>	0/7	number of video input
nmediastream	<positive integer>	0/7	number of media stream per channel
nvideosetting	<positive integer>	0/7	number of video settings per channel
naudiosetting	<positive integer>	0/7	number of audio settings per channel
nuart	0, <positive integer>	0/7	number of UART interface
ptzenabled	< boolean >	0/7	indicate whether to support PTZ control
protocol_https	< boolean >	0/7	indicate whether to support http over SSL
protocol_rtsp	< boolean >	0/7	indicate whether to support rtsp
protocol_sip	<boolean>	0/7	indicate whether to support sip
protocol_maxconnection	<positive integer>	0/7	The maximum allowed simultaneous connections
protocol_rtp_multicast_scalable	<boolean>	0/7	indicate whether to support scalable multicast
protocol_rtp_multicast_backchannel	<boolean>	0/7	indicate whether to support backchannel multicast
protocol_rtp_tcp	<boolean>	0/7	indicate whether to support rtp over tcp
protocol_rtp_http	<boolean>	0/7	indicate whether to support rtp over http
protocol_spush_mjpeg	<boolean>	0/7	indicate whether to support server push motion jpeg
protocol_snmp	<boolean>	0/7	indicate whether to support snmp
videoin_type	0, 1, 2	0/7	0 => Interlaced CCD 1 => Progressive CCD

			2 =>
videoin_resolution	<a list of the available resolution separates by comma)	0/7	available resolutions list
videoin_codec	<a list of the available codec types separaters by comma)	0/7	available codec list
videoout_codec	<a list of the available codec types separaters by comma)	0/7	available codec list
audio_aec	<boolean>	0/7	indicate whether to support acoustic echo cancellation
audio_extmic	<boolean>	0/7	indicate whether to support external microphone input
audio_linein	<boolean>	0/7	indicate whether to support external line input
audio_lineout	<boolean>	0/7	indicate whether to support line output
audio_headphoneout	<boolean>	0/7	indicate whether to support headphone output
audioin_codec	<a list of the available codec types separaters by comma)	0/7	available codec list
audioout_codec	<a list of the available codec types separaters by comma)	0/7	available codec list
camctrl_httptunnel	<boolean>	0/7	Indicate whether to support the http tunnel for camera control
uart_httptunnel	<boolean>	0/7	Indicate whether to support the http tunnel for uart transfer
transmission_mode	Tx, Rx, Both	0/7	Indicate what kind of transmission mode the machine used. TX: server, Rx: receiver box, Both: DVR?.
network_wire	<boolean>	0/7	Indicate whether to support the Ethernet
network_wireless	<boolean>	0/7	Indicate whether to support the wireless

wireless_802dot11b	<boolean>	0/7	Indicate whether to support the wireless 802.11b+
wireless_802dot11g	<boolean>	0/7	Indicate whether to support the wireless 802.11g
wireless_encrypt_wep	<boolean>	0/7	Indicate whether to support the wireless WEP
wireless_encrypt_wpa	<boolean>	0/7	Indicate whether to support the wireless WPA
wireless_encrypt_wpa2	<boolean>	0/7	Indicate whether to support the wireless WPA2

Group: event_i<0~2>

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
name	string[40]	6/6	The identification of this entry
enable	0, 1	6/6	To enable or disable this event.
priority	0, 1, 2	6/6	Indicate the priority of this event. “0” indicates low priority. “1” indicates normal priority. “2” indicates high priority.
delay	1~999	6/6	Delay seconds before detect next event.
trigger	boot, di, motion, seq,	6/6	Indicate the trigger condition. “boot” indicates system boot. “di” indicates digital input. “motion” indicates video motion detection. “seq” indicates periodic condition.
di	<integer>	6/6	Indicate which di detected. This field is required when trigger condition is “di”. One bit represents one digital input. The LSB indicates DI 0.

mdwin	<integer>	6/6	Indicate which motion detection windows detected. This field is required when trigger condition is "md". One bit represents one window. The LSB indicates the 1st window. For example, to detect the 1st and 3rd windows, set mdwin as 5.
inter	1~999	6/6	Interval of period snapshot in minute. This field is used when trigger condition is "seq".
weekday	<interger>	6/6	Indicate which weekday is scheduled. One bit represents one weekday. The bit0 (LSB) indicates Saturday. The bit1 indicates Friday. The bit2 indicates Thursday. The bit3 indicates Wednesday. The bit4 indicates Tuesday. The bit5 indicates Monday. The bit6 indicates Sunday. For example, to detect events on Friday and Sunday, set weekday as 66.
begintime	hh:mm	6/6	Begin time of weekly schedule.
endtime	hh:mm	6/6	End time of weekly schedule. (00:00 ~ 24:00 means always.)
action_do_i<0~(ndo-1)>_enable	0, 1	6/6	To enable or disable trigger digital output.
action_do_i<0~(ndo-1)>_duration	1~999	6/6	The duration of digital output is triggered in seconds.
action_server_i<0~4>_enable	0, 1	6/6	To enable or disable this server action. The default value is 0.
action_server_i<0~4>_media	NULL, 0~4	6/6	The index of attached media.

Group: server_i<0~4>

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
name	string[40]	6/6	The identification of this entry
type	email, ftp, http, ns	6/6	Indicate the server type. “email” is email server. “ftp” is ftp server. “http” is http server. “ns” is network storage.
http_url	string[128]	6/6	The url of http server to upload.
http_username	string[64]	6/6	The username to login in the server.
http_passwd	string[64]	6/6	The password of the user.
ftp_address	string[128]	6/6	The ftp server address
ftp_username	string[64]	6/6	The username to login in the server.
ftp_passwd	string[64]	6/6	The password of the user.
ftp_port	0~65535	6/6	The port to connect the server.
ftp_location	string[128]	6/6	The location to upload or store the media.
ftp_passive	0, 1	6/6	To enable or disable the passive mode. 0 is to disable the passive mode. 1 is to enable the passive mode.
email_address	string[128]	6/6	The email server address
email_username	string[64]	6/6	The username to login in the server.
email_passwd	string[64]	6/6	The password of the user.
email_senderemail	string[128]	6/6	The email address of sender.
email_recipientemail	string[128]	6/6	The email address of recipient.
ns_location	string[128]	6/6	The location to upload or store the media.
ns_username	string[64]	6/6	The username to login in the server.
ns_passwd	string[64]	6/6	The password of the user.
ns_workgroup	string[64]	6/6	The workgroup for network storage.

Group: media_i<0~4>

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
name	string[40]	6/6	The identification of this entry
type	snapshot, systemlog videoclip	6/6	The media type to send to the server or store by the server.
snapshot_source	<integer>	6/6	Indicate the source of media stream. 0 means the first stream. 1 means the second stream and etc.
snapshot_prefix	string[16]	6/6	Indicate the prefix of the filename.
snapshot_datesuffix	0, 1	6/6	To add date and time suffix to filename or not. 1 means to add date and time suffix. 0 means not to add it.
snapshot_preevent	0 ~ 7	6/6	It indicates the number of pre-event images.
snapshot_postevent	0 ~ 7	6/6	The number of post-event images.
videoclip_source	<integer>	6/6	Indicate the source of media stream. 0 means the first stream. 1 means the second stream and etc.
videoclip_prefix	string[16]	6/6	Indicate the prefix of the filename.
videoclip_preevent	0 ~ 9	6/6	It indicates the time of pre-event recording in seconds.
videoclip_maxduration	1 ~ 10	6/6	The time of maximum duration of one video clip in seconds.
videoclip_maxsize	50 ~ 1500	6/6	The maximum size of one video clip file in Kbytes.

Group: record_i<0~1>

PARAMETER	VALUE	SECURITY (get/set)	DESCRIPTION
name	string[40]	6/6	The identification of this entry

enable	0, 1	6/6	To enable or disable this recoding.
priority	0, 1, 2	6/6	Indicate the priority of this recoding. “0” indicates low priority. “1” indicates normal priority. “2” indicates high priority.
source	<integer>	6/6	Indicate the source of media stream. 0 means the first stream. 1 means the second stream and etc.
weekday	<interger>	6/6	Indicate which weekday is scheduled. One bit represents one weekday. The bit0 (LSB) indicates Saturday. The bit1 indicates Friday. The bit2 indicates Thursday. The bit3 indicates Wednesday. The bit4 indicates Tuesday. The bit5 indicates Monday. The bit6 indicates Sunday. For example, to detect events on Friday and Sunday, set weekday as 66.
begintime	hh:mm	6/6	Begin time of weekly schedule.
endtime	hh:mm	6/6	End time of weekly schedule. (00:00~24:00 means always.)
prefix	string[16]	6/6	Indicate the prefix of the filename.
cyclesize	<integer>	6/6	The maximum size for cycle recording in Kbytes.
maxfilesize	200~6000	6/6	The max size for one file in Kbytes

Drive the digital output

Note: This request requires the privilege of viewer.

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/dido/setdo.cgi?do1=<state>[&do2=<state>]

[&do3=<state>][&do4=<state>][&return=<return page>]
```

Where state is 0, 1. “0” means inactive or normal state while “1” means active or triggered state.

PARAMETER	VALUE	DESCRIPTION
do<num>	0, 1	0 – inactive, normal state
		1 – active, triggered state
return	<return page>	Redirect to the page *<return page>* after the parameter is assigned. The *<return page>* can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page.

Example: Drive the digital output 1 to triggered state and redirect to an empty page

```
http://myserver/cgi-bin/dido/setdo.cgi?do1=1
```

Query status of the digital input

Note: This request requires the privilege of viewer.

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/dido/getdi.cgi?[di0][&di1][&di2][&di3]
```

If no parameter is specified, all the status of digital input will be returned.

Return:

```
HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <length>\r\n

\r\n
```

```
[di0=<state>]\r\n

[di1=<state>]\r\n

[di2=<state>]\r\n

[di3=<state>]\r\n
```

where <*state*> can be 0 or 1.

Example: Query the status of digital input 1

```
Request:

http://myserver/cgi-bin/dido/getdi.cgi?di1



Response:

HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: 7\r\n

\r\n

di1=1\r\n
```

Query status of the digital output

Note: This request requires the privilege of viewer.

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/dido/getdo.cgi?[do0][&do1][&do2][&do3]
```

If no parameter is specified, all the status of digital output will be returned.

Return:

```
HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <length>\r\n

\r\n
```

```
[do0=<state>]\r\n
[do1=<state>]\r\n
[do2=<state>]\r\n
[do3=<state>]\r\n
```

where <*state*> can be 0 or 1.

Example: Query the status of digital output 1

```
Request:
http://myserver/cgi-bin/dido/getdo.cgi?do1


Response:
HTTP/1.0 200 OK\r\n
Content-Type: text/plain\r\n
Content-Length: 7\r\n
\r\n
do1=1\r\n
```

Capture single snapshot

Note: This request require normal user privilege

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/viewer/video.jpg?[channel=<value>][&resolution=<value>]
[&quality=<value>]
```

If the user requests the size larger than all stream setting on the server, this request will failed!

PARAMETER	VALUE	DEFAULT	DESCRIPTION
channel	0~(n-1)	0	the channel number of video source
resolution	*<available resolution>*	0	The resolution of image

quality	*1~5*	3	The quality of image

Server will return the most up-to-date snapshot of selected channel and stream in JPEG format. The size and quality of image will be set according to the video settings on the server.

Return:

```
HTTP/1.0 200 OK\r\n

Content-Type: image/jpeg\r\n

[Content-Length: <image size>\r\n]


<binary JPEG image data>
```

Account management

Note: This request requires administrator privilege

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/admin/editaccount.cgi?

method=<value>&username=<name>[&userpass=<value>][&privilege=<value>]

[&privilege=<value>][…][&return=<return page>]
```

PARAMETER	VALUE	DESCRIPTION
method	add	Add an account to server. When using this method, “username” field is necessary. It will use default value of other fields if not specified.
	delete	Remove an account from server. When using this method, “username” field is necessary, and others are ignored.
	edit	Modify the account password and privilege. When using this method, “username” field is necessary, and other fields are optional. If not specified, it will keep original settings.
username	<name>	The name of user to add, delete or edit
userpass	<value>	The password of new user to add or that of old user to modify. The default value is an empty string.

privilege	<value>	The privilege of user to add or to modify.
	viewer	viewer's privilege
	operator	operator's privilege
	admin	administrator's privilege
return	<return page>	Redirect to the page <*return page*> after the parameter is assigned. The <*return page*> can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page.

System logs

Note: This request require administrator privilege

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/admin/syslog.cgi
```

Server will return the up-to-date system log.

Return:

```
HTTP/1.0 200 OK\r\n

Content-Type: text/plain\r\n

Content-Length: <syslog length>\r\n

\r\n

<system log information>\r\n
```

Upgrade firmware

Note: This request requires administrator privilege

Method: POST

Syntax:

```
http://<servername>/cgi-bin/admin/upgrade.cgi
```

Post data:

```
fimage=<file name>[&return=<return page>]\r\n

\r\n

<multipart encoded form data>
```

Server will accept the upload file named <file name> to be upgraded the firmware and return with <return page> if indicated.

IP filtering

Note: This request requires administrator access privilege

Method: GET/POST

Syntax:

```
http://<servername>/cgi-bin/admin/ipfilter.cgi?

method=<value>&[start=<ipaddress>&end=<ipaddress>][&index=<value>]

[&return=<return page>]
```

PARAMETER	VALUE	DESCRIPTION
Method	addallow	Add a set of allow IP address range to server. Start and end parameters must be specified. If the index parameter is specified, it will try to add starting from index position.
	adddeny	Add a set of deny IP address range to server. Start and end parameters must be specified. If the index parameter is specified, it will try to add starting from index position.
	deleteallow	Remove a set of allow IP address range from server. If start and end parameters are specified, it will try to remove the matched IP address. If index is specified, it will try to remove the address from given index position. [start, end] parameters have higher priority then the [index] parameter.
	deletedeny	Remove a set of deny IP address range from server. If start and end parameters are specified, it will try to remove the matched IP address. If index is specified, it will try to remove the address from given index position. [start, end] parameters have higher priority then the [index] parameter.
start	<ip address>	The start IP address to add or to delete.

end	<ip address>	The end IP address to add or to delete.
index	<value>	The start position to add or to delete.
return	<return page>	Redirect to the page *<return page>* after the parameter is assigned. The *<return page>* can be a full URL path or relative path according the the current path. If you omit this parameter, it will redirect to an empty page.

RTSP SDP

Note: This request requires viewer access privilege

Method: GET/POST

Syntax:

```
http://<servername>/viewer/<0~(n-1)>/<network_accessname_<0~(m-1)>>

rtsp://<servername>/<0~(n-1)>/<network_accessname_<0~(m-1)>>
```

“n” is the channel number and “m” is the stream number.

You can get the SDP by HTTP or just describe by RTSP protocol directly. For detailed streaming protocol, please refer to “control signaling” and “data format” documents.

D. Technical data

Video
Compression: MPEG-4 & MJPEG
Max. Resolution: 640x480 Pixel
Available resolutions: 640x480, 320x240, 176x144
Framerate: max. 25 fps

Audio
GSM-AMR, Bit rate: 4.75 Kbit/s
MPEG-4 AAC, Bit rate: 16 Kbit/s ~ 128 Kbit/s
Two way Audio
Built in microphone
Microphone input
Audio output
Mute

Streaming
Dual streaming of MPEG-4 and MJPEG
MPEG-4 streaming over UDP, TCP or HTTP
MPEG-4 multicast streaming
MPEG-4 streaming over RTSP
MJPEG streaming over HHTP

Picture settings
Size, quality, bitrate
Timestamp and title on video
Flip & Mirror
Brightness, contrast, saturation
AGC, AWB, AEC
IR cut filter: Auto, manual, schedule, digital input (only TV7222, TV7223)
Backlight compensation (BLC)
Privacy masking (5 areas, user selectable)

System
Flash: 8MB
RAM: 64 MB
Image sensor: ¼ inch Progressive Scan CCD sensor
Shutter: 1/30 Sek. ~ 1/50000 Sek.
LED display: 2 color Status LED
IR cut filter for day/night function (only TV7222/TV7223)

Network
10/100 Mbps Ethernet, RJ-45
Protocols (among others): IPv4,TCP/IP, HTTP, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, FTP, DHCP, NTP, DNS, DDNS, PPPoE
W-LAN 802.11b/g (only TV7222/TV7223)

Safety
Multi level password security
IP address filter
W-LAN: WEP, WPA-PSK, WPA2

Event management
Video motion detection
Digital input and output
Event notification over HTTP, SMTP, FTP
Local recording on PC in MP4 file

Power supply
12VDC / max. 750 mA
802.3af POE (Power over Ethernet) (only TV7220, TV7222)

Environment
Temperature: 0~35°C
Humiditiy: 20%~80% RH

System requirements
OS: Windows XP/2003/Vista
Browser: Internet Explorer, Mozilla Firefox
Mobile: 3GPP-Player
Real Player 10.5
Quicktime 6.5
Packet Video Player 3.0
VLC Player

E. Licence information

GNU GPL

We point at the fact that thenetwork cameras TV7220, TV7221, TV7222 and TV7223 among other things include Linux software source codes that are licensed under the GNU General Public Licence (GPL). To assure a GPL compliant usage of the used source codes we point at the licence terms of GPL.

Licence text

The licence text of the GNU General Public Licence can be found on the included software CD or on the ABUS Security-Center Homepage under http://www.abus-sc.de/DE/Service-Downloads/Software?q=GPL

Source Code

The used source codes are available on the ABUS Security-Center Homepage under
http://www.abus-sc.de/DE/Service-Downloads/Software?q=GPL
for free download.

Operation of the total system

With a download of the software packages (source codes) it is not possible to built a running total system. Therefor additional software applications and the network camera hardware is needed.

F. License

MPEG-4 AAC Technology

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